# AMERICAN ANNALS OF THE DEAF

FOUNDED 1847

*Official Organ*

**Conference of Executives of American Schools for the Deaf**

FOUNDED 1868

**American Instructors of the Deaf**

FOUNDED 1850

POWRIE VAUX DOCTOR, Ph.D.
*Editor*

D. ROBERT FRISINA, Ph.D.
*Associate Editor*

*Under the Direction of the Executive Committee of the Conference*

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| WILLIAM J. McCLURE | Indiana, 1963 |
| *Chairman* | |
| GEORGE T. PRATT | Massachusetts, 1961 |
| DANIEL T. CLOUD | New York 1961 |
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**SEPTEMBER, 1960**

**Volume 105** **Number 4**

## THE CONFERENCE OF EXECUTIVES OF AMERICAN SCHOOLS FOR THE DEAF

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The Conference of Executives of American Schools for the Deaf, originally the Conference of Superintendents and Principals of American Schools for the Deaf, was founded in 1868 and subsequently incorporated under the laws of the State of Maryland in 1958. The Conference is an organization of the executive heads of schools for the deaf in the United States and Canada, and has for its object "to promote the management and operation of schools for the deaf along the broadest and most effective lines and to further and promote the general welfare of the deaf."

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The American Instructors of the Deaf, founded in 1850 and incorporated by act of Congress in 1897, is an organization of educators of the deaf in the United States and Canada with the general object of "promotion of the education of the deaf on the broadest, most advanced and practical lines," and for that purpose "to secure the harmonious union in the organization, of all persons actually engaged in educating the deaf in America."

VOLUME 105 NUMBER 4

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SEPTEMBER, 1960

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# AMERICAN SCHOOLS FOR THE DEAF

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# The American Annals of the Deaf

The AMERICAN ANNALS OF THE DEAF was founded in 1847 at the American School for the Deaf in Hartford, Connecticut, by the members of the faculty of that school, which is the first free public school for the deaf in America. Although the journal received the approval of the administrative school authorities, the periodical was first entirely sponsored by the members of the faculty. After two years the ANNALS was discontinued for some months but was revived by the members of the American Instructors of the Deaf in their first meeting in New York, N. Y., in 1850.

In June, 1861, the publication ceased because of the War Between the States, inasmuch as the membership was made up of northerners and southerners in almost equal proportion. In September, 1868, the AMERICAN ANNALS OF THE DEAF resumed publication with the editorial office on Kendall Green, in Washington D. C., where it has since remained.

The AMERICAN ANNALS OF THE DEAF is the official organ of the Conference of Executives of American Schools for the Deaf, which was organized in 1868, and of the American Instructors of the Deaf, founded in 1850. According to the Library of Congress it is the oldest educational publication in the United States still in existence. It is also the oldest journal on the education of the deaf in the world.

The ANNALS is published five times a year, being issued in September, November, January, March, and May. The subscription price is $5.00 a year, payable in advance. If five or more copies of the ANNALS are sent to one address, the subscription price is $3.50 a year. Single numbers sell for one dollar, except for the January number which sells for $3.00. Back issues are available for 1847, 1848, 1849, 1857, and from September, 1868, to the present. Indexes for 1847–1875, 1876–1885, 1886–1895, 1896–1905, are available at $4.00 each. Indexes for 1906–1915, 1916–1925, 1926–1935, 1936–1945, 1946–1955, were issued as regular numbers of the ANNALS and may be purchased for $3.00 each. From 1956 indexes are included in the regular November numbers at single copy price. All requests for subscriptions or for back numbers should be addressed to Editor, AMERICAN ANNALS OF THE DEAF, Gallaudet College, Washington 2, D. C.

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# AMERICAN ANNALS OF THE DEAF

Vol. 105 September, 1960 No. 4

## ANNOUNCEMENTS

The American Speech and Hearing Association will meet in Los Angeles, Calif., from Nov. 1 to 5. The headquarters will be at the Statler Hilton Hotel.

The Eastern Regional meeting of the Council for Exceptional Children will meet in Baltimore, Md., Nov. 9 to the 12th. Several sections on the education of the deaf will be held. Headquarters will be at the Southern Hotel.

The West Central Regional meeting of the Council for Exceptional Children will be held in Oklahoma City from Nov. 16 to the 19th. Several sections on the education of the deaf will be held.

The Council for Exceptional Children will hold its annual meeting in Detroit, Michigan, from April 4th to the 8th. The headquarters will be held at the Statler-Hilton Hotel.

### Official Call for the Meeting of the Convention

The 40th regular meeting of the American Instructors of the Deaf will be held at the Oregon School for the Deaf, Salem, Oregon, June 25 to the 30th.

Richard G. Brill, *President*
Genevieve M. Ryan, *Secretary*

### Official Call for the Meeting of the Conference

The thirty-third regular meeting of the Conference of Executives of American Schools for the Deaf will be held at the Oregon School for the Deaf during the meeting of the American Instructors of the Deaf from June 25 to the 30th, for the purpose of conducting the necessary business, including reports of the officers and chairmen of standing committees, and the election of executive committee members, and such other business as may properly come before the meeting.

William J. McClure, *President*
Ben E. Hoffmeyer, *Secretary*

**Workshop on Identification of Researchable Vocational Rehabilitation Problems of the Deaf, Gallaudet College, Washington, D. C., June 19-22, 1960, Sponsored by the Office of Vocational Rehabilitation, U. S. Department of Health, Education, and Welfare**

**A Special Report Based on a Research Conference Conducted at Gallaudet College, Washington, D. C. June 19-22, 1960**

*Project Director*
POWRIE V. DOCTOR, Ph.D., Gallaudet College

*Editors*
MERRILL ROGERS, A.B., Washington, D. C.
STEPHEN P. QUIGLEY, Ph.D., Gallaudet College

The Conference was made possible, in part, by a Grant provided by the United States Office of Vocational Rehabilitation Washington, D. C.

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# FOREWORD

## Identification of Researchable Rehabilitation Problems of the Deaf

As the rehabilitation of disabled people becomes more of a reality all over the world, the problems faced by certain groups of disabled people are highlighted too. Among the most severe handicaps human beings can be called upon to endure and adjust to, is deafness. In these days when we are truly part of ONE WORLD, whether in conflict or in peace, communication with each other to achieve the understanding necessary to live together becomes one of the prime necessities for survival.

Deafness can impede the communication of individual to individual, and cumulatively from groups of individuals to the community. This is not to say that many deaf people have not learned fully the art of communication. But for the vast majority this ability fully to be in tune with the universe by their communication has not been achieved. Perhaps this is because of our lack of understanding of the importance of dealing with the problem in early childhood, or our faulty educational processes. Sometimes it results from the determination of deaf people themselves to be self contained and self sufficient.

As we in the Office of Vocational Rehabilitation have coped with the problems of providing increased effective rehabilitation services to the deaf citizens of this nation, we have become acutely aware of the need for disciplined investigation into many aspects of deafness about which all too little is known.

In the past much of the research about the deaf has been directed toward the hearing mechanism itself. We have from this research a body of knowledge which is of great importance in understanding the physical aspects of hearing loss. However, little systematic research has been undertaken on the impact of profound deafness on the individual. Here are fertile fields for the psychologist, the sociologist, the psychiatrist —to name only a few.

This conference has brought together research workers to focus on research which needs to be done to accomplish better the vocational rehabilitation of the deaf. Because it is the first time such a group has thought and dreamed together, the results as reported in this valuable proceeding will have impact and far reaching effects on the thinking and planning for a long time to come.

As Director of our public program of vocational rehabilitation, I want to express deep gratitude to all who participated and express the hope that this will be the beginning of a stimulating cooperative effort which will be one more link in the chain of effective rehabilitation service for the deaf around the world.

Mary E. Switzer, Director
Office of Vocational Rehabilitation
Department of Health, Education and Welfare
Washington, D. C.

# PREFACE

The administration of a program of grants for the support of research includes the responsibility to encourage continuing efforts to study the most important and relevant problems by the most effective methods. In order to do this, there must be communication among researchers in a given field, and communication and mutual stimulation between the special group and those in other disciplines whose knowledge may contribute to the specialty.

In the discharge of such responsibility, the Office of Vocational Rehabilitation, under its Research and Demonstration Grant Program, made a grant to Gallaudet College to conduct the conference herein reported. The purposes were to identify important research problems in the vocational rehabilitation of the deaf, and their relative priorities; to bring these problems to the attention of investigators in many disciplines; and thereby hopefully to increase the effectiveness of methods for the vocational rehabilitation of the deaf.

This report of the conference proceedings, itself, is an important link in the process of communication from one investigator to another. Now that the meeting is over, the report becomes the single most effective repository of the experience generated by the conferees. It is therefore a record to be most carefully examined and analyzed if it is to serve its purpose as one link to future study. For this reason, the report should also attract and hold the interest of administrators of schools and other agencies and institutions training and otherwise serving the deaf, for in the long run the things that are taught and the services provided depend on the new things that are learned.

It is a great personal satisfaction to have been associated with the faculty of Gallaudet College in the preparation of the conference and its proceedings.

GILBERT R. BARNHART, Ph.D.
Chief, Division of Research Grants
and Demonstrations
Office of Vocational Rehabilitation

## Introduction

Since the number of deaf persons in the United States is small in comparison to the total population, many hearing persons during their lifetimes have little or no contact with a deaf person. It is to be expected, therefore, that they will have little knowledge of the problems imposed by deafness; and that what knowledge they might possess is likely to be erroneous in at least some respects. In view of this, any attempt to present research needs in the area of the deaf to a large number of professional individuals should provide some general background information to aid in understanding and interpreting those needs. In particular, it is desirable to provide information on the population under consideration, the deaf; on the special educational problems imposed by deafness; and on the sub-culture within which most deaf persons function socially.

### The Deaf

A number of attempts have been made to formulate definitions of deafness and at least two of these definitions have gained considerable usage. They are: (1) the definition of the White House Conference on Child Health and Welfare, and (2) the definition of the Conference of Executives of American Schools for the Deaf. Each of these definitions attempts to define deafness in terms of a single variable: the White House Conference definition in terms of the time and the method of establishing speech and language, and the Conference of Executives definition in terms of the present functional auditory status of the individual. While each of these definitions has considerable merit, it is recognized today that deafness needs to be defined on the basis of a whole complex of variables which may interact with each other to varying degrees.

Some of the variables which are important in defining deafness and in describing the deaf population are:

1. *The degree of loss.* This is the traditional psycho-acoustical variable for measuring deafness. The degree of loss usually is measured in decibels. The deaf individual can be described in terms of his degree of loss of awareness and response to sound.

2. *Age of onset of deafness.* The age at which an individual loses his hearing is of crucial importance in the educational process and in his psycho-social and vocational adjustment. Two individuals might have exactly the same hearing loss as measured in decibels with an audiometer; yet, if one individual were born deaf and the other became deaf at the age of 15, there likely would be profound differences between them in such factors as educational achievement, language development, and speech development.

3. *Method of communication used by the deaf individual.* There is variation among deaf persons in the methods by which they communicate with each other and with hearing persons. Some deaf persons rely almost exclusively on speech and speechreading for communication. Others use mostly the language of signs. Still others depend largely upon the use of finger spelling. Probably the majority use various combinations of these methods. It is probable that the method of communication used has significance for the vocational guidance and adjustment of any deaf individual.

4. *The deaf person's attitude toward his deafness.* The reaction of the deaf person to his deafness has important implications for his psycho-social and vocational adjustment. He may react by striving to become a member of the hearing community and refraining from participation in the deaf community. He may react in exactly the opposite manner and shun participation in the hearing community. He may endeavor to function as well as possible in both the deaf and the hearing communities.

These are only a few in the complex of variables which must be considered when attempting to describe the deaf population. Each of the variables should be considered as a continuum along which deaf persons may be distributed. It is difficult, therefore, to discuss or to describe the "typical" deaf person. Individuals who are termed deaf may vary widely in degree of hearing loss, in age of onset of hearing loss, in methods of communication used, in their attitudes toward their deafness, and in many other factors. For example, an individual might be classified audiometrically as being hard-of-hearing on the basis of his decibel loss and yet be considered sociologically as deaf on the basis of his acceptance of, and gravitation to, the deaf community rather than the hearing community. Similar interactions are possible among the other variables.

In spite of the wide variation among deaf persons on the dimensions described, it is possible to list some factors which probably are common to most deaf individuals and which might serve to some extent as being descriptive of the deaf population. Deaf persons have in common the fact that they have hearing losses severe enough to produce serious disorders of communication. These disorders of communication coupled with the age at which deafness occurs as well as with other factors produce a need for special educational and rehabilitation procedures. Deaf persons also have in common the fact that they are coupled to the world visually. Although recent technological advances in the design and construction of hearing aids, in addition to increased emphasis on auditory training procedures, has undoubtedly improved the utilization of residual hearing by deaf persons, it is likely that most of them still depend primarily on the sense of vision for communication and for the acquisition of information.

## The Education of the Deaf

Some of the important educational factors to be understood in relation to the research needs in the vocational rehabilitation of the deaf concern the types of schools in which deaf children are educated and the methods of communication which are used or permitted in the different types of schools. Since the types of schools and the methods of communication used in them vary, it is possible that the variations later will influence the psycho-social and vocational adjustment of the adult deaf. Just what influence the variations may have remains to be determined by research.

There are three major types of educational facilities available for deaf children in the United States: residential schools, day schools, and day classes. *Residential schools,* whether they be public, private, or denominational, usually provide separate educational facilities and boarding facilities for their students. *Day schools* generally provide segregated educational facilities except for play and vocational training. In these

schools, however, boarding facilities are not provided since the children return home after school hours. *Day classes* usually are part of regular public school systems located within schools for hearing children and attempt, in varying degrees, to integrate deaf pupils with classes for hearing students.

One important point to be considered here in relation to research is the effects of the varying degrees of isolation of deaf students from the hearing community which may be presented by these three types of educational facilities. What effects such isolation may have on the later psycho-social and vocational adjustment of the adult deaf remain to be determined. The question is complicated by the fact that the educational and vocational programs provided by the different types of facilities are not comparable in some respects. For example, residential schools often provide quite extensive programs of, and facilities for, vocational training. Where such training exists in day schools and classes, it usually is offered in schools for the hearing where special teachers may be provided to assist the deaf students. The effects of such differences in the programs of the various types of schools need to be considered in designing research projects to determine the educational, vocational, and psycho-social effects of the different types of schools.

The problem of the varying methods of communication used or permitted is related to the type of school. In general, day schools and day classes use and permit to be used only oral methods. This is true also of private and denominational residential schools. Most public residential schools, however, use what is termed the combined system. In the *combined system,* children are instructed by oral methods during the first years in school; however, other classes in which manual methods of communication may be employed are provided for those children who appear not to make satisfactory progress with the oral method. *It should be emphasized that this combined system is not a method for teaching the deaf, but is a system that provides for oral and non-oral classes to be conducted within a single school.* The point of interest here is the non-oral classes. These classes may use the language of signs, finger spelling, the combined method, or the simultaneous method.

The *oral method* includes the use of speech, speechreading, and hearing aids in the communication process. The *combined method* includes the use of speech, speechreading, hearing aids, and finger spelling. The *simultaneous method* includes the use of speech, speechreading, hearing aids, finger spelling, and the language of signs. In addition to these three methods, residential schools sometimes have classes in which the language of signs is used predominantly. Besides using manual methods of communication in some classes, public residential schools usually permit the students to use these methods in communicating outside of the classroom.

The use of finger spelling and the language of signs in some schools, and their use by the adult deaf, is of interest and importance in research on the deaf. The language of signs is considered by some to contain all the elements of a formal language. It makes use of manual signs and gestures to convey concepts as contrasted to the use of words for the same purpose. Finger spelling is not a language, but a means of transmitting a language through the use of hand and finger positions representing the letters of the alphabet of the language. It would be of importance to know what effects the use of these methods of com-

munication have on the educational, vocational, and psycho-social adjustment of deaf persons.

### The Sub-Culture of the Deaf

Reference is made in some sections of the report to the sub-culture of the deaf and the community of the deaf. The term community may be somewhat mis-leading since it may be taken to mean a group of some size living in proximity to each other. While this may be true of the deaf in some instances, what is perhaps of more importance is the tendency of the deaf to *socialize* with each other to a greater extent than with hearing persons. This has important research implications, which were developed in several sections of the conference.

This tendency of the deaf to seek social satisfactions with other deaf persons to a greater extent than with hearing persons has given rise to a complex system of social organizations among the deaf. There are national professional and fraternal associations, clubs, insurance societies, churches, athletic associations, newspapers, and journals operated for and by deaf persons. Within these organizations and within more informal groupings of deaf persons, the deaf individual often seeks satisfaction of his social needs. It also should be pointed out in this context that marriage between deaf persons is the rule rather than the exception. This inter-associating of the deaf, no matter what terms may be used to identify it, is of importance in determining and defining research needs.

### The Research Conference

The founding of the American School for the Deaf in West Hartford, Connecticut, in 1817, was the beginning in the United States of organized, special education for deaf persons. During the years that followed, the teaching of the deaf became not only highly specialized but, to an extent, isolated from the main stream of education. Perhaps as a consequence of this, and also because of the small number of deaf persons in the total population (sometimes estimated as approximately 200,000), systematic research by many disciplines has been lacking.

In an effort to cross departmental lines and to interest research workers in such fields as psychology, sociology, audiology, anthropology, communication, rehabilitation, and education, in the field of deafness as a research area, the Office of Vocational Rehabilitation, Department of Health, Education, and Welfare provided financial support for a conference at Gallaudet College to determine the research needs in the vocational rehabilitation of the deaf. In June, 1960, more than sixty participants took part in this conference. This report is based on their deliberations.

Credit for the success of the conference is due to many people. The members of the Steering Committee performed admirably in their role of planning the conference. The participants, who represented many professional disciplines, deserve special gratitude for giving so generously of their time and talents to achieve the goals established for the conference. Among the participants were a number of deaf people who contributed that valuable personal knowledge of the problems of deafness which perhaps can be contributed only by those who are themselves deaf. Also singled out for special thanks are the interpreters, Lloyd A. Ambrosen, Elizabeth E. Benson, Louie J. Fant, and Edward L. Scouten.

who worked diligently through long hours to provide the communication link between the deaf and hearing members of the conference. Gratitude also is due to Miss Georgie E. Holden, Director of Public Relations at Gallaudet College; to the secretarial staff of the AMERICAN ANNALS OF THE DEAF, Doris F. Cartledge, Helen S. Slasor, Florence A. Waters, and Doris R. Phelps; and to Isabel C. Lee for her painstaking work in the typing of the manuscript. One of the most arduous tasks in the conference was the recording of the deliberations of the participants in the various sections. Sincere gratitude is extended to Mrs. Sarah Cook Henderson and Mrs. Shirley P. Stein for the thorough and professional manner in which they performed this task. It should be added that, although the recordings formed one of the bases of the report, any errors and inadequacies in the report are the sole responsibility of the editors.

## I. Psychological Assessment

### Problems and Methods

It is recognized that psychological assessment involves more than merely the administration of tests. Whereas testing involves the obtaining of a quantitative characterization of a person on one or more traits, assessment includes both this quantitative characterization and the qualitative characterization of the person as a total organism. Assessment includes not only the measuring instruments of the scientist but also the skills and arts of the clinician. With due recognition of the importance of the qualitative aspect of assessment there remains, however, the need for a variety of instruments or tests with which to measure various aspects of the psycho-educational functioning of the deaf individual. Such instruments serve a useful and practical purpose for measurement and prediction in educational and vocational guidance and placement. Instruments of this type are widely available for the testing of hearing persons, but have not been developed in a systematic manner for use with the deaf. This is probably due to the complexity of the special problems involved in the area of deafness as well as to the lack of skilled personnel and to the tremendous scope of the problem.

There are a number of special problems which are common to all areas of the psychological assessment of deaf persons. Chief among these is the deficiency in language development which separates the deaf person from the hearing world. As measures of potential, verbal tests have serious limitations when used with the deaf. There appears to be a need for the construction and standardization of non-verbal instruments for use with the deaf in every area of psychological assessment.

A second major problem involves the approach that should be used in test construction. There are at least three possible approaches. Firstly, existing tests for hearing persons could be applied without modifications to the deaf and the performance of the deaf could be compared with the norms established on hearing persons. In some areas, such as educational achievement, this approach might be justified. In other areas, however, where one attempts to estimate potential rather than achievement, such an approach is likely to penalize the deaf individual and give an untrue estimate of the trait in question. For example, the use of verbal intelligence tests with the deaf is more likely to result in a measure of language achievement than in an estimate of intellectual capacity. This difficulty might perhaps be avoided through the use of

non-verbal intelligence tests, but such tests generally measure rather specific and concrete types of activity and fail to measure the more abstract processes that are so important in language acquisition.

A second approach that could be used in test construction would be to modify existing tests and apply them to the deaf. Such modifications, however, might render useless the norms which were established for the unmodified test. When a test has been standardized in a certain manner with a given set of instructions and a given set of test items, the manner in which the test is later used by the clinician supposedly should conform to the procedures followed in the standardization process. The instructions should be followed faithfully, all of the test items should be presented, and the test items should be presented in the determined order. When any deviation from the standardized test occurs, the psychologist then cannot be sure of the effect it will have on the standardization norms. When considerable modification of a test is made, such as eliminating certain kinds of test items, serious doubt arises as to the applicability of the norms.

A third approach would be to construct tests specifically for the deaf and standardize them on the deaf population. The question then arises as to the meaningfulness of such norms. Would it be desirable to compare the performance of the deaf individual only with the performance of other deaf individuals when all such persons eventually must function economically in a hearing society? The problem, of course, really does not involve only an either/or choice. In some areas of psychological assessment the emphasis is on estimating the individual's potential. In such cases specially constructed and standardized tests for the deaf might be the proper approach. In other areas where the emphasis is on the measurement of the actual level of achievement, tests and norms for hearing persons might best be used.

In discussing the problems involved in the psychological assessment of the deaf and the approaches that might be used, the conferees suggested that all of the approaches might profitably be employed. Existing tests, modifications of existing tests, and specially constructed tests could be used if two sets of norms always were established; one set of norms for the hearing population and a separate set of norms for the deaf population. A variety of instruments then would be available for the several areas of psychological assessment and the separate sets of norms would permit comparison of the performance of any deaf individual with the performance of hearing persons and also with the performance of deaf persons.

The conferees considered that this approach might profitably be applied to all of the areas of psychological assessment: intellectual capacity, educational achievement, psycho-social adjustment, vocational aptitudes, and vocational interests. (In addition to these areas, there also is a great need for the development of non-verbal tests of concept formation. This is a problem of such fundamental importance, however, that it is discussed in a separate section.) It should be emphasized that the task of constructing and standardizing instruments for the psychological assessment of the deaf would require the efforts of many skilled persons working systematically and continuously over very long periods of time. There is a definite need to have established research centers undertake such projects on a long-term basis.

## Concept Formation, Learning, and Communication

There appears to be agreement that the acquisition of the language of the hearing society in which he eventually must function to some extent is the basic problem confronting the deaf individual. This is a problem of fundamental importance not only in the area of psychological assessment but in almost all areas of research involving deaf persons. The problems involved in the area of language are discussed more fully in the chapter on *LANGUAGE*. Basic to an understanding of the language problem, however, is an understanding of the conceptualization and learning processes of deaf persons. This emerged among the conferees in the section on psychological assessment as probably the most important area for research.

There appears to be a definite and fundamental need for the development of non-verbal tests of concept formation which could be used to study the actual conceptualization processes of the deaf. Along with this there is a need for systematic studies of the learning processes. Research on the deaf might be advanced in many areas if scientific information were available on their conceptualization and learning processes. It is important to know how these processes develop in the deaf child and the adult, how they are similar to the same processes in hearing individuals, and how they differ. It should be re-stressed that the conduct of such basic research probably would necessitate the development of instruments for the measurement of the processes.

Related to concept formation and learning is the area of communication. Instruments are needed in this area to measure and to predict the deaf child's potential for learning speech and speechreading. Consideration should be given also to the construction of instruments for measuring manual methods of communication: the language of signs and finger spelling. Great advances might be made in the education and rehabilitation of the deaf if it were possible to predict in advance the degree of skill that any deaf child or adult could be expected to acquire in any or all of the various means of communication now used.

## Research Needs and Priorities

During the general discussion a number of research problems were identified. In addition, each conferee submitted a list of problems. From the discussion and from the submitted lists, the following problems emerged as being the most important. They are listed in order of the priorities that were assigned to them by the conferees.

1. *Studies of the conceptualization and learning processes.*

Non-verbal instruments are needed to assess the conceptualization processes, abstract thinking, and learning processes of the deaf. Such instruments could then be used to study these processes in the deaf from the very young child to the adult and to determine how these processes are similar to and different from the same processes in hearing persons.

2. *Development of instruments for the various areas of psychological assessment.*

The areas were identified as: intellectual capacity, educational achievement, psycho-social adjustment, vocational aptitudes, and vocational interests. Existing tests could be used or modified and tests specifically for the deaf could be constructed where necessary. Two sets of norms could be obtained for each test: norms on the hearing population and

norms on the deaf population. Such instruments and norms could be used for educational and vocational guidance and placement. They also might advance research in other areas since such instruments probably are needed in the promotion of many research projects. The tests should be non-verbal in most instances but should not be subject to the deficiencies of many non-verbal tests in measuring only specific and concrete activities. They must be designed to measure also the more abstract processes.

3. *Development of instruments for measuring communication potential and ability.*

Instruments need to be constructed and standardized which will permit the measurement and prediction of the deaf person's capacity to learn, and to learn by, the various methods of communication now used: speech, speechreading, fingerspelling, and the language of signs.

4. *Programmatic research.*

Established research centers should be encouraged to undertake the long term projects necessary for the development of instruments for the psychological assessment of the deaf. While it is valuable to define the areas in which research on the deaf is needed, it is equally important that plans be made for the implementation of the recommendations submitted. Most projects in the area of psychological assessment would require the combined skills of many individuals, in a number of disciplines, working over long periods of time. Attention should be given to ways and means of accomplishing this.

## II. Language

### Definition of Language

There is a need here to differentiate between language as an arbitrary system of symbols by means of which members of a culture communicate and interact and the intelligibility of the various forms in which the symbols may be expressed, such as speech, writing, finger spelling, and signs. This is a fairly important distinction to make in referring to the language problems of the deaf, since with this group meaning and intelligibility are not necessarily synonymous. For example, a deaf individual may be able to speak a sentence with intelligible articulation without being aware of the meaning of what is being said. This example could also be applied to a hearing person who learns to pronounce the words of a foreign language without awareness of the meanings of the words. The problem of language with the deaf individual thus may be thought of in terms of the acquisition of the meanings of symbols and the acquisition of the syntactical structures of these symbols as they are used by the culture in which he functions.

The phrase "as they are used by the culture in which he functions" raises still another problem. As is pointed out in various sections of this report, the deaf individual usually functions within the community of hearing persons and also within the sub-culture of the deaf. These two types of communities may be considered to use different languages. The dominant language of the hearing community of the United States is English. Among the deaf, however, the language of signs is extensively used. Although questions may be raised as to whether the language of signs is truly a language, there appears to be some agreement that it is; and evidence accumulated in a study being conducted by the Linguis-

tics Research Laboratory at Gallaudet College, under a grant from the National Science Foundation, seems to substantiate this. Certainly there appears to be considerable agreement that the language of signs as used by the deaf in the United States differs from English in symbolic and syntactical structure at least.

At present, the problems of language which are the concern of most persons working with the deaf are the problems encountered when deaf persons attempt to interact with the hearing community. The deaf person usually must function within this community to some extent. To do so, and to help increase the extent of his participation within the hearing community, it is necessary that he know the language of that community. This would include knowledge of both the written and spoken forms of the language. The conferees, however, felt that speech is particularly a problem of intelligibility and that attention in the discussion should be focused on the problems of language as expressed in the written form.

### Language Problems of the Deaf

Basic to any systematic study of the language problems of the deaf is the need for an instrument which will adequately measure the language of the deaf. Dissatisfaction has frequently been expressed with the use of instruments which are presently available and which were constructed for use with hearing persons. Most of these instruments seem to measure the quantitative aspects of language and do little to assess the qualitative aspects. It is these qualitative aspects which appear to be major problems with the deaf. Deaf persons often achieve scores on standardized language tests which are comparable to the norms for their hearing peers; yet, examination of the written compositions of these deaf persons will reveal many errors not present in the compositions of hearing individuals. Thus, a major difficulty in the construction of language tests for the deaf would appear to be the devising of a quantitative scale for what is basically qualitative material.

If instruments could be constructed which were valid and reliable for measuring the language of the deaf in its written form (and possibly in other forms) they would be useful in pursuing research on the language of the deaf in many areas. Studies could be made of the language development of the deaf from the young child to the adult. Studies of the language development, it has been asserted, should begin with the child at about the age of one year. At this level, study might involve concept formation as differentiated from language using word symbols. This would relate to the recommendations in the chapter, *PSYCHOLOGICAL ASSESSMENT*, that non-verbal tests of concept formation be developed and used to study the processes of concept formation in the deaf child and adult. In the same section it was recommended that the learning processes of the deaf be subjected to extensive investigation. This would complement research on language development which probably would also involve investigation of language learning.

In addition to using the tests for studies of language development, they could be used to establish language norms on both the school population and the adult population. Such norms do not presently exist. The normative and developmental studies should include attempts to relate language development and achievement to a number of variables in order to determine which variables are important in the

development of language skills. In this respect might be mentioned the effects of various types of school environments and various methods of communication or instruction on the development of language. What, for example, are the effects on language development of instruction where only oral methods of communication are used, of instruction where manual methods of communication are extensively used, and of environments where oral methods of instruction are used during school hours but manual methods are permitted among the children after school hours?

It would be important also to know how the adequacy or inadequacy of the language of a deaf person is related to his psycho-social and vocational adjustment. Language is not only the means whereby an individual receives and transmits information, it also is a medium for the expression of feelings and emotions. What is the effect on the emotional adjustment of the child of not having a ready means of communication to make his needs known? Would his adjustment be aided by providing him early in life with a method of communication which he could use, such as the language of signs or finger spelling? If so, what effects would such manual methods of communication later have on his acquisition of the English language of the hearing community?

## Research Needs and Priorities

This section of the conference adopted a recommendation that programmatic research, as contrasted to single research studies, should be encouraged. In addition to this general recommendation, a number of research proposals were submitted. These are listed in order of the priorities assigned to them by the conferees.

1. *Development of language scales.*

It was agreed that appropriate tools of measurement are lacking in the area of language. Of primary importance, therefore, for the investigation of almost any problem in this area is the development of scales for measuring both the expressive and receptive levels of written, oral, and manual communication. This multi-phased problem has the highest priority, while it is recognized that circumstances may make possible the studies of other problems at an earlier date.

2. *Effects of language deprivation on the emotional, social, and mental development of deaf persons.*

   a. How, from the viewpoint of the deaf adult, do language difficulties complicate social and vocational adjustment?
   b. What is the relationship between the total adjustment of deaf persons and their levels of language development?
   c. What are the difficulties in adjustment resulting from inability to express and communicate emotions by means of structured language of any kind?
   d. What is the relationship between language level and concept formation in the adult deaf? How does concept formation relate to overall adjustment?
   e. What differences are there in perception, cognition, and emotional approaches to the world by the deaf as compared to the hearing person? If differences do exist, are they due to verbal language deficiencies?

3. *Effects of different methods of communication on language development.*
   a. What would be the subsequent effects of using both the manual and oral approaches to language development on the very young child as opposed to the use of one method exclusively?
   b. The hypothesis has been stated that beyond a certain age (5 or 6) a child who has not been exposed to and learned language with normal syntax will find it very difficult to do so. Hence it is necessary to investigate means of exposing the deaf child to such language as early in life as possible.
4. *Relationships between written language and the language of signs.* If it is assumed (a) that there are at least five basic English sentence patterns, it seems possible that there is an imbalance in the language development of the typical deaf child in favor of two of these patterns; (b) that if this partiality can be shown by count, it may be an important factor in the development of abstract thinking of deaf children because most of our abstract thinking is done in two linking patterns. This would result in a problem of (a) making a count of the distribution of these five patterns in appropriate English materials: (1) transitive verb, (2) intransitive verb, (3) linking verb and adjective, (4) linking verb and noun, (5) passive and other verb phrases; and (b) of determining whether the deaf child's writing shows a normal or an imbalanced distribution.

## III. Sub-Culture of The Deaf

### Social Life of the Deaf

It is often little realized by hearing persons that the deaf population in the United States has a complex of social organizations composed of and operated by deaf persons. These include national professional and fraternal organizations, churches, clubs, insurance societies, newspapers, journals, and athletic associations. These social institutions are highly organized on a national and sometimes on an international level. The athletic associations, for example, are organized to the extent that International Games of the Deaf are held periodically. It is within these formal social organizations of the deaf and within other more informal groupings of deaf people that the deaf person usually seeks social intercourse.

What are the needs that produced these organizations and the tendency of the deaf to seek social satisfactions within the deaf community rather than within the hearing community? Such cultural subgroups exist because they serve a purpose. The need to be understood, and to belong, usually are motivating forces in belonging to all such groups. If the need to belong is a primary motivating force for the deaf person in seeking membership in the deaf community, does he then feel that he does not or cannot belong to the hearing community? These are questions which need to be answered by research. Certainly, there exists a need for extensive and intensive studies of the deaf sub-group both as a community and as a sub-culture. Information is needed on the role and values of the sub-culture, on the functions it fulfills for its members, and on the social controls and sanctions which it can impose.

### Social Roles Possible for the Deaf

There are a number of possible social roles which the deaf person can fill. At one extreme, he can function as a member of the deaf community as described, and actively or passively refrain from participation in the hearing community insofar as economic and geographic conditions allow. At the other extreme, he may seek to function wholly as a member of the hearing community and totally reject the deaf community. A third possibility is for the deaf person to function, in such manner and degree as suits his own needs and values, both within the community of the hearing and the community of the deaf. These choices, of course, should not be considered as discrete categories; rather, there is a continuum between the two extremes along which the deaf person may seek the place for which his total personality best fits him. Each of these roles undoubtedly has its advantages and rewards as well as its disadvantages and penalties. What these may be, needs to be known. Careful studies need to be made of the individuals who function at different places along the continuum in order to determine the frustrations and satisfactions resulting from the various types of adjustment.

For the deaf person who strives to function only as a member of the hearing community, the price paid in frustration might be very high. Will the hearing community truly accept deaf persons into its membership, or are most of the acceptances that are made colored by feelings of pity and charity? And what of the deaf person who attempts to avoid participation in the hearing community? Is his life-space seriously restricted thereby? What are the emotional and economic consequences of this avoidance? How complete can such avoidance be since deaf persons, for the most part, must function economically within the hearing community? To what degree is this avoidance shared by persons who hear? Does it result from non-acceptance of the hearing community by deaf persons, or from non-acceptance of the deaf person by the hearing community? The third possibility, participation in both the hearing and deaf communities, also raises many questions such as the extent to which the individual functions within one or the other community, what satisfactions and frustrations result from participation in each of the communities, etc. Answers to all such questions should be sought through research.

### Barriers to Social Participation by Deaf Persons in the Hearing Community

If there are barriers to social participation in the hearing community by deaf persons, what are they, and what can be done to remove or to alleviate them? Two major possible barriers have been suggested: 1) the barrier of communication which is a result of deafness, *per se;* and 2) the cultural barrier of segregated educational environment which might instill a sub-culture in the deaf world but is not a necessary consequence of deafness itself. The roles played by each of these and other variables in contributing to the formation of a deaf sub-culture should be explored. How, for example, is the deaf child socialized in schools and taught to become a deaf adult? Does the educational segregation of deaf children contribute to the formation of a deaf sub-culture, or

is this sub-culture entirely a consequence of deafness and the communication barrier produced by deafness?

The communication barrier refers, of course, primarily to the usually severe difficulties in oral communication (speech and speechreading) commonly experienced by deaf persons, but it can also extend to reading and writing since many deaf persons have language difficulties which may make reading and writing ineffective as means of communication. Among themselves, probably the majority of deaf people in the United States use manual methods of communication: the language of signs, finger spelling, or a combination of these. These special methods of communication are unknown, of course, to the vast majority of hearing persons. It would be of importance to know how much they contribute to the isolation of the deaf community from the hearing community. What contribution does a high degree of skill in speech and speechreading make to the success of a deaf person in penetrating and integrating into hearing society? How satisfying is that penetration vocationally and socially? Similarly, how important is a knowledge of the language of signs and finger spelling for a hearing person seeking acceptance by the deaf community? These, and many other questions in this area, require answers.

## Research Needs and Priorities

At the close of the session, lists of research problems were submitted by the conferees. A total of fifty-three suggestions were submitted. The following seven projects, listed in order of the priorities assigned to them by the conferees, represent a summary of the areas of research which the suggestions indicated. The first five areas relate to research needs and the remaining two concern research procedures.

1. *Demographic area studies.*

Because of the distribution of the deaf population in the United States, it would be difficult to locate all deaf persons for a demographic study on a national scale. Consequently, demographic studies should be made in selected areas to obtain information concerning the deaf person's socio-economic, religious, familial, and political status; his methods of communication, occupational history, etc.

Investigations should be made of the social interaction between the deaf person and the hearing members of the community; between the hearing child and his deaf siblings and/or deaf parents; and between the deaf child and his deaf and/or hearing siblings and parents. Studies should be conducted of the attitudes of the hearing community toward the deaf individual, specifying such categories within "the hearing community" as: rural, urban, suburban, individuals of varying ages and economic positions, etc., and within "the deaf individual" categories such as: the congenitally deaf and the adventitiously deaf.

What are the characteristics of the deaf community: the educational level achieved, methods of communication, occupations, social organizations, etc.?

2. *Studies in developmental psychology.*

Studies need to be made of successive levels of aspirations of deaf people with particular emphasis on economic and social areas, and the desired goals and attainments they set for their children.

Long-term studies of developmental patterns should be conducted. Included in such studies should be factors bearing upon emotional

dependency, age levels, and conditions that affect the gravitation of deaf people to the sub-cultural group of the deaf.

Valuable information on how the individual relates to the school, home and community situation, and his concept of his position therein might be revealed by autobiographical studies.

3. *Effects of the deaf community.*

Attempts should be made to determine the specific effects on the deaf individual of the deaf sub-group and its social institutions. What is the range and nature of social control the sub-group exercises on its members? Can one delineate its sanctions, its educational values, and the relative social position within the group for the individual which flows from varying levels of vocational attainment?

What are the needs of the individual that the sub-group satisfies? What are the forces favoring his entrance into and remaining in the deaf community? In what way can the cultural, social, and recreational level of the deaf sub-group be expanded through adult education?

4. *Emotional adjustment.*

How does the emotional adjustment of the deaf individual at varying ages, from early childhood through adolescence, compare with that of the normal hearing child of equivalent ages? Does the emotional adjustment of the deaf individual vary, depending upon the extent to which he acts within the deaf or the hearing community?

5. *Cultural characteristics of the deaf.*

There is a need to ascertain, through breadth and depth studies as well as through experimental and behavioral studies, the cultural characteristics peculiar to the deaf and how social groups among the deaf arise.

6. *Research procedures.*

Some possible methods for studies of the sub-culture of the deaf are:

a. Autobiographical studies
b. Demographic studies
c. Statistical surveys
d. Case history methods
e. Anthropological methods
f. Opinion research studies
g. Content analysis of literature by and for the deaf

7. *Research personnel.*

In making studies of deaf individuals and the deaf population the role of the interviewer and/or interpreter is an exceedingly important one. There is need for awareness of the possible loss of valuable information if the interviewer and/or interpreter is inadequate either in communication skills or in interviewing techniques. Consequently, investigation should be made to determine the adequacy of interviewers and researchers of the deaf. There is need, too, to study the methods which have been successfully employed in previous research on the deaf.

## IV. Vocational Development

### Vocational Training and Guidance in Schools for the Deaf

The various types of schools and classes for the deaf, public residential schools, private and denominational residential schools, day schools, and day classes, differ in the terminal points of their educational programs and in the vocational guidance and training offered to their students

Day schools and day classes usually offer little or no vocational guidance or training. The emphasis throughout the day programs is on academic education, and the terminal point varies usually between the sixth and ninth grades. The students from such schools and classes then either enter the occupational world, or enter academic or vocational high schools for normal-hearing students where the assistance of special teachers may or may not be provided for the deaf students. Most of the other special schools for the deaf offer, in addition to the academic program, vocational guidance and training of some type. This training varies from general shopwork to intensive training in specific occupations.

A number of problems are suggested by these differing programs. What are the skills, attitudes and aspirations of students who enter the occupational world directly from schools for the deaf which offer only academic programs terminating between the sixth and ninth grades? Such students probably lack the academic skills of comparable hearing students who are entering the occupational world, and they have not received any vocational training which might help to off-set their academic disadvantages. Studies are needed to determine the potential occupational status of such students and to determine the problems confronting them in achieving occupational success and satisfaction. Similar studies are needed of deaf graduates of the same schools who enter academic or vocational high schools for normal-hearing students. What are the factors which determine the success or failure of deaf students in these programs? How does their occupational success and satisfaction compare with that of the graduates of the same types of schools for the deaf who enter directly into the occupational world without being exposed to further training in academic and vocational high schools for hearing students?

Research also is needed on students from schools for the deaf which offer vocational training in addition to academic training. These vocational programs vary from general shopwork to intensive training in specific vocations. The recently published survey, *Occupational Conditions Among the Deaf,* conducted by Gallaudet College and the National Association of the Deaf, under a grant from the United States Office of Vocational Rehabilitation, indicates that most deaf students do not become employed in the occupations for which they were trained by their schools. This is not, of course, any indictment of the programs of the schools. The same situation apparently is true for hearing students from vocational high schools. Although the students might not become employed in the occupations for which they were trained, it is reasonable to assume that the general work habits, attitudes, and skills acquired in such training would be beneficial in any occupation which was pursued. Nevertheless, studies should be undertaken of the extent to which the vocational training programs of schools for the deaf reflect the vocational opportunities in the occupational world. It has been suggested also that a survey should be made of the tools, materials, and processes used in the occupational world and that studies be made to determine if the schools should concentrate on exposing the student to these tools, materials, and processes and to extensive information about a variety of occupations rather than to intensive training in one or two vocations.

Specific training in an occupation is, of course, desirable but this

could be achieved in other ways. Demonstration projects of on-the-job training could be established, as could regional vocational high schools for the deaf. These schools might use existing community resources or separate facilities might have to be provided. These programs could provide academic and vocational training designed to narrow or eliminate the gap existing between the skills of deaf students and the skills of comparable hearing students entering the occupational world. It is probably this gap between the skills of comparable deaf and hearing students and between the actual skills of the deaf and their potential to acquire such skills, coupled with the attitudes of employers and the general public which is primarily responsible for the most persistent and important vocational problem of the deaf—*underemployment;* that is, the tendency to be employed in the lower-level occupations and to be denied promotions to higher levels.

Such programs would leave the presently existing schools for the deaf free to concentrate on academic programs, broad pre-vocational preparation, and also, perhaps, on training for occupations peculiar to the specific region in which any given school is located. There appears to be a need also for the existing schools to establish comprehensive programs of vocational guidance and counseling. Facilities need to be provided for the training of special personnel to direct this counseling and guidance. These counselors would need to have all the skills of any guidance person plus training in the special problems of the deaf. They could direct and co-ordinate the vocational guidance and training within the school and co-ordinate the school's program with the services later provided to graduates by state vocational rehabilitation agencies.

### Vocational Guidance and Placement by State Vocational Rehabilitation Agencies

The counselor in the state vocational rehabilitation agency is confronted with the task of fitting the deaf applicant to the most suitable occupation. The occupation, or occupations, must be determined in terms of the abilities, aptitudes, and interests of the individual seeking help as well as in terms of the employment opportunities available at the time. With the deaf applicant this is a considerable task. Since few counselors have special training in, or knowledge of, the problems of deaf persons, they are likely to feel inadequate in counseling them.

The deaf applicant presents many new and special problems for the counselor. First, there is the problem of communication. The counselor will find that, in many instances, he cannot communicate orally with the deaf applicant. He then is likely to resort to writing and may soon find that the deaf person has deficiencies and special problems in writing and reading also. Thus, the total communication process becomes difficult.

A second major problem will confront the counselor in attempting to assess the abilities, aptitudes, and interests of the deaf client. He is likely to resort to the use of common tests for these areas. Such tests, however, will be tests constructed for hearing persons. They will have norms established on hearing persons and usually will be highly verbal. In the area of vocational interests, for example, the counselor is likely to use the Kuder or Strong tests. These instruments require a reading grade level far in excess of the level of the average deaf adult. In this area a picture test of vocational interests is being constructed and

GHEIST's Test

standardized under the direction of the Office of Psycho-Educational Research at Gallaudet College, with the support of a grant from the United States Office of Vocational Rehabilitation. Similar instruments are needed in the other areas which the counselor must assess. This is a recurring theme in several sections of the report.

A third major problem which will face the counselor is the attitudes of employers and the general public toward the deaf. These attitudes usually are based on inadequate knowledge about the deaf and on the common but erroneous belief that intellectual capacity is adequately reflected in the individual's ability to use spoken and written language. This, of course, places the deaf person at a considerable disadvantage. Language is his special problem and any evaluation of his potential and skills on this basis will penalize him.

All of these problems which confront the counselor in the state vocational rehabilitation agency suggest urgent research needs. There is a need for counselors who are adequately trained in the special problems of the deaf. Particularly, they should be trained to communicate with the deaf person by whatever means the deaf person uses most adequately. One step in this direction has been taken by the O.V.R. sponsored program at Gallaudet College which offers four-week courses to counselors who work with deaf persons. Such programs, however, should be offered in many centers and should be much more intensive and extensive in scope.

The problem of assessing the abilities, aptitudes, and interests of deaf persons suggests an urgent need for the construction and standardization of instruments for such assessment. This need has been emphasized in several other sections of the report. Specifically pertaining to the area of vocational assessment is the need for instruments for the measurement of aptitudes and interests. The construction of instruments in all the necessary areas will require long-term, systematic effort by many persons and disciplines.

Important research problems also are suggested by the difficulties in the final placement of the deaf person in an occupation. The attitudes of employers toward the deaf may result in reluctance to employ them; and when they are employed, they often are employed in occupations where communication is a minimal requirement. This results in the deaf being engaged in the lower-level occupations and in their being denied opportunities for advancement. Surveys based on the *Occupational Conditions Among the Deaf* should be conducted to establish the efficiency of the deaf worker as compared to the hearing worker, and to discover the factors which determine success or failure for the deaf worker. In particular, intensive research should be conducted on those deaf persons who presently have achieved some degree of success in the higher-level occupations and professions. It is important to know the factors responsible for their success. Having determined these factors, the knowledge should be applied to the training of the deaf and to intensive efforts to open the doors of the higher-level occupations and professions to greater numbers of deaf persons.

### Research Needs and Priorities

From the general discussion and from the lists of research problems submitted by the conferees a number of research needs emerged. These are listed in order of the priorities assigned to them with the exception

that the first three areas were assigned equal priorities by the conferees.

1. *Criteria of vocational success and satisfaction.*

Criteria of vocational success and satisfaction need to be established for the deaf. This could be approached by sampling the employed deaf and through the collecting of data by the case history method, questionnaires, interviews, etc. In the process of establishing criteria for success and satisfaction, these studies should attempt to determine the factors important to success and satisfaction by relating these criteria to a number of variables, among them the following:

a. degree of hearing loss
b. age of onset of hearing loss
c. type of occupation
d. methods of communication employed
e. type of educational program attended before employment
f. amount of vocational training acquired prior to employment and type of facility in which it was acquired
g. abilities, interests, and aptitudes
h. personal and social adjustment

Many other variables also should be explored. Those listed here are merely suggestive of some of the most important. Studies of this type would provide data for the development of tools for the prediction of success and satisfaction.

2. *Development of measuring instruments.*

The second researchable area is thus the prediction problem. The major problem here is to develop instruments to assess the vocational potential of the deaf. The need for such instruments was emphasized in other sections of the conference and is discussed more fully in the chapter on *PSYCHOLOGICAL ASSESSMENT.*

3. *Vocational counseling services.*

The third important research area concerns the nature and extent of vocational counseling services provided for the deaf both by the schools and by state vocational rehabilitation agencies. We need to know how effective present services are and what improvements and additions are required. Research in this area should include investigation of:

a. the counseling process
b. the client variable
c. the counselor variable
d. the setting in which counseling takes place
e. the use of occupational information and tests in counseling

Surveys should be conducted to elicit from counseling services presently working with deaf persons the most important needs for improvement. Further studies based on these surveys should then be undertaken to fill the established needs. In particular, there appears to be a strong need for the training of vocational guidance personnel who have, in addition to all necessary counseling skills, knowledge of the special problems involved in the guidance and placement of deaf persons.

4. *Demonstration vocational high schools.*

Surveys should be conducted to determine if there is a need for the establishment of regional high schools for the deaf adolescent and adult which would offer academic and vocational training designed to narrow or eliminate the gap between the actual achievement and skills of deaf persons and their potential for acquiring these skills. At present, there is a considerable gap between the academic achievement of deaf persons

and their intellectual capacity as well as between deaf persons and comparable hearing persons. Whether a similar gap exists in vocational skills probably will depend on the school attended by any given deaf person. If a need is found to exist for regional vocational high schools, they should be established initially as demonstration and experimental projects.

## V. Education

The education of the deaf is discussed in a section of the introductory chapter of the report and is not elaborated further here. Since the educational problems of the deaf are very numerous and range from those of the young child to those of the adult, the conferees decided to limit their consideration to those educational problems which more or less directly relate to the vocational adjustment of deaf persons. Following this approach, a number of problems were isolated in which research is urgently needed and these are listed in the order of the priorities assigned to them.

### Research Needs and Priorities

1. *Extracurricular education.*

It is the consensus among modern educators that all activities under the direction and supervision of a school—whether classroom or extracurricular activities—should be designed for educative purposes. In applying this concept to deaf pupils, the question arises as to the effectiveness of extracurricular planning. The question is especially important in view of the need of deaf pupils for designed educational approaches not only to scholastic learnings but also to the great body of knowledge, attitudes, and general information involved in everyday living.

Since the large majority of deaf pupils attend residential schools and since the house parents in such schools (also termed counselors) are major figures in extracurricular activities, investigations are needed concerning:

a. The competencies and qualifications of house-parents in residential schools throughout the country for extending and implementing classroom instruction and educational goals.
b. The establishment of standards and training facilities for house parents.
c. The attitudes of house-parents toward their roles in schools for the deaf, and the attitudes toward the house-parents of regular teaching staffs, the parents, and the pupils.

An important complementary study to the foregoing is:

d. A comparative survey of extracurricular activities among deaf pupils in residential schools, in day schools, and in day classes to determine:
   1) the nature and total number of such activities;
   2) their distribution among the various types of schools; and
   3) the extent to which planned outside direction is needed and provided.

2. *Adult education for the deaf.*

In view of the steadily increasing demand for adult education facilities among the normally hearing, a survey should be conducted to determine the need for such facilities among the deaf especially in regard

to communication and language skills as well as content material involved in courses concerned with personal, social, and vocational fulfillment and adjustments, and to determine the desire among the deaf themselves for adult educational opportunities.

In conjunction with this survey, demonstration programs in adult education for the deaf should be established on a research-exploratory basis in various communities with the cooperation of schools for the deaf, adult deaf societies, and experts in adult education. Such programs possibly could utilize existing community educational facilities and resources. Along with the demonstration programs of adult education, there should be established regional demonstration programs for deaf adolescents. Many deaf adolescents attend schools which terminate their education at the eighth or ninth grade level and which offer little or no vocational training and guidance. Regional demonstration programs could fill the educational and vocational gaps between the levels attained by these adolescents and the levels which are necessary for satisfactory vocational success and satisfaction.

3. *Relationship between educational variables and adult adjustment.*

In view of the unusually close relationship between the development of deaf persons and the nature of their educational experiences, careful investigation is required concerning the influence of educational variables and clusters of variables on adult fulfillment—socially, vocationally, and scholastically. A recommended approach would be through carefully designed follow-up studies of former students of schools for the deaf, as well as of other types of schools and instructional facilities attended by deaf pupils.

Some of the educational variables involved in such studies are:

a. Age of beginning school
b. Age of leaving school
c. Total length of time under instruction
d. Type of school (or schools) attended
e. Systems of instruction used in schools
f. Method of communication favored by pupil
g. Nature of extracurricular learning experience

Also involved in such studies are such individual variables as:

a. Innate capacities and aptitudes
b. Family influences
c. Age of becoming deaf
d. Amount of hearing loss
e. Health factors and/or other disabilities

Finally, a basic consideration in such studies of "success," "failure," "fulfillment," etc., is adequate definition of these terms not only in the commonly accepted sense but also from the subject's own point of view as well as from that of others in his immediate circle such as family, employer, fellow-employee, etc.

4. *Integration.*

The successful integration of numbers of blind pupils in the regular schools is arousing increasing interest on the part of various State Boards of Education to promote a similar policy of integration for deaf pupils. Basic information is urgently needed to determine the degree of success of these programs. Recommended, therefore, is a nation-wide survey to compare the adjustment and attainments of deaf pupils in the regular schools with those of equated peers in schools for the deaf

that are of equivalent rating as educational centers. A number of the variables involved here have been mentioned in the preceding section. Some of the sub-problems involved in the study are:

a. What factors determine a deaf pupil's readiness for *full* participation in an integrated program?
b. What are the determinants of success or failure in such placement?
c. What are the criteria for "success" or "failure"?
d. What are the views and experiences of the adult deaf who have been exposed to integrated programs? Their adjustments and attainments as compared to an equated group of peers who have attended schools for the deaf?

5. *Influence of attitudes on educational motivation and adult adjustment.*

Because early, severe deafness is an "invisible" disability that manifests itself largely as a communication disorder, there is a traditional misconception on the part of the public concerning the true handicaps involved in this disability. This obtains even for parents of deaf children who have had no previous contact with deafness. It is important therefore to investigate the manner in which attitudes derived from such misconception influence the adjustment and attainments of the deaf. Investigations are needed concerning:

a. the relationship between parent attitudes and educational attainment
b. the relationship between parent attitudes and ultimate adult adjustment
c. a survey of the attitudes of the general public toward the deaf
d. the establishment of programs of public education based on the outcome of (c), to correct public misconceptions and unfavorable attitudes
e. the establishment of alternative plans for employer education, as well as for employee education, possibly through union cooperation

6. *Vocational education and adjustment*

Of high importance in the vocational adjustment of the deaf are: (a) knowledge of facts, routines, customs, and procedures of the occupational world; and (b) easy interpersonal communication with hearing co-workers. Important aspects of these and other vocational education problems have been submitted for research by other sections. To these are added the following:

a. a study to investigate the efficiency of captioned films as a means of broadening occupational and vocational knowledge of deaf persons
b. a study of adaptive devices or techniques (films, film strips, etc.) to facilitate communication during the critical period of initial adjustment to an occupation
c. a study of methods for the development of more comprehensible speech among the deaf as an aid in vocational adjustment

7. *Educational measurements*

Problems in the measurement of aptitudes, scholastic achievement, and vocational potential of deaf persons have been submitted for investigation by other sections of the conference. To these are added the following:

The construction of an achievement test battery for deaf students which on the basis of sampling of content and standardization provides information about the true academic standing of the students, both in comparison with deaf peers as well as with the hearing. This battery should take into consideration the special language problems of deaf pupils and should be so constructed that the expression of a student's knowledge is not hampered by difficulties with vocabulary and language.

## VI. Genetics, Family, and Institutionalization

### Genetics

Contemporary data on the genetics of deafness in the United States are inadequate and often inaccurate. The United States Bureau of the Census has been a major source of this information but, because of the difficulties encountered in collecting data and the suspected inaccuracy of the statistics provided, the Bureau abandoned its activities in this area following the 1930 census. Thus, the actual incidence of hearing loss in the population is not accurately known and the estimates usually quoted vary widely. There is a need for accurate statistics in this area and for studies relating the statistics to various etiological factors.

A major obstacle to the gathering of such data is the mobility of the population in the United States. Extensive data are available from other countries, such as Denmark, where the populations are geographically stable and where systems of state medicine encompassing the total populations make the collecting of data comparatively easy. These surveys in other countries might serve as procedural models for surveys in the United States. Pilot studies could perhaps be conducted in agricultural states such as Minnesota, which have reasonably stable populations, and in states such as California where the population is more mobile. These pilot surveys could serve as the basis for the design of a comprehensive survey of the incidence of hearing loss in the total population of the country.

The proposed surveys should not be limited merely to determining the incidence of deafness but should attempt to relate the statistics to etiological factors. There are indications that the populations of schools for the deaf are composed of increasingly large percentages of congenitally deaf children. This likely is a result of improved medical treatment which apparently has reduced the incidence of adventitious deafness resulting from medically-reversible causes. The schools also report increases in the number of multiple-handicapped deaf children. Again, this might be due to improved medical care which saves the lives of seriously handicapped children who formerly might have died. The changing character of the population in schools for the deaf is of importance in educational and vocational planning and the etiological bases for the changes need to be determined.

### Family

The two most important institutions affecting the development of any child are the family and the school and in many ways the family is the more important of the two. Yet, this is one of the most neglected areas of research on the deaf. Numerous studies are needed to determine the impact on the family of the birth of a deaf child. The

reaction of the family to this event has far-reaching implications for the total development of the child as well as for the functioning of the family itself. Sociological and psychological research of the status of the family with deaf members should be given high priority in research programs. A suggested reference for such investigation is *The Growth of American Families: II,* authored by Paul Glick and published by the University of Michigan's Survey Research Center.

Counseling pamphlets should be prepared containing specific guiding principles for deaf and hearing parents regarding their deaf and hearing children. Although the content for such pamphlets should be determined through research, some of the items dealt with should concern methods of communication, possibilities for education, whom the deaf marry, and the possibilities for vocational success and satisfaction. These pamphlets could serve to reduce parental anxiety and to inform parents of what are realistic educational and vocational goals for the deaf person in light of the special problems that confront him.

For the pamphlets to achieve their goals, many studies of the family should be conducted to determine the content of the pamphlets. Is the family with deaf members structurally different from hearing families? What is the cohesiveness, or lack of it, in the family with a deaf child: the effect of the "organized" family versus the "disorganized" family? In the one category might be the parents who jointly and individually attempt to relate to and communicate with the child in whatever manner possible. In the other category might be the situation wherein one parent bears the responsibility of relating to the child, while the other parent by indifference or uncommunicativeness actively or passively rejects the child. There are indications that families of the latter type are quite common. Because of this there is a need for guidance pamphlets for the family and for early social work with the parents.

The means whereby the family communicates with its deaf members should be explored as should the advisability of the family's using manual methods of communication. While the use of manual methods of communication might allow the parents to communicate more readily with the deaf child than would the exclusive use of speech, its effects on the future educational development of the child must be considered. Would the use of such means of communication with the young deaf child hinder the later acquisition of speech and speechreading or would it perhaps aid in the acquisition of these skills? This problem has occasioned a persisting controversy in the education of the deaf but has produced no systematic research. Such research is needed.

## Institutionalization

The term "institutionalization" as used here refers only to the school or other institution as a sub-group and as a substitute for the family. For a variety of reasons, mostly relating to the comparatively small number of deaf children in the total population, most deaf children attend residential schools. In this sense the school serves as a substitute for the family and is concerned with the total psycho-social development of the child as well as with his educational and vocational development. Studies with hearing children raised in institutions of various types indicate that separation from the family can result in effects which are detrimental to the development of the child. There is some question,

however, of the applicability of this conclusion to residential schools for the deaf.

Many of the studies of hearing children have used children who were orphaned or separated from their families by a major catastrophe such as war. A number of the studies apparently indicate that such separation must take place very early in life and be permanent, or of long-term duration, for the effects of institutionalization to become apparent. Furthermore, the institutions which were studied were often orphanages where the emphasis was on custodial care. Residential schools for the deaf are concerned primarily with the educational, vocational, and psycho-social development of the child and custodial care is simply a necessary condition imposed by the residential situation. Nonetheless, careful studies need to be conducted to determine what effects, if any, the residential pattern of education may have on the development of the deaf child.

Some studies have been conducted in the past which compared children in day schools for the deaf with children in residential schools for the deaf. Such a design, however, does not isolate the variable of institutionalization well enough to allow its effects to be studied. There are many differences between day schools and residential schools other than that the children in day schools live at home and children in residential schools usually live at the school, and many of these factors are difficult to control. Other research designs are needed. One possible design, which presently is being used in a study of this problem by the Office of Psycho-Educational Research at Gallaudet College under a grant from the United States Office of Education, consists of comparing day students within residential schools with resident students in the same schools. There are some problems involved in using these day students as a control group but most of the problems appear to be amenable to control.

Many other research designs probably could be used in studies of this problem. Institutionalized hearing children could be used as controls. Longitudinal studies could be conducted of children in day schools and residential schools. Studies of the adults who graduated from the two types of schools might also add valuable information. Many studies of these types could help determine what effects, if any, residential education has on the deaf child, what continuing effects it has on the adjustment of the adult, and what the schools could do to alleviate any established effects.

Such studies should be extensive as well as intensive. Many aspects of human behavior should be investigated: educational development, communication ability, psycho-social adjustment, and vocational success and satisfaction. It is not enough to study one variable alone because any detrimental effects produced by institutionalization in one area might be countered by benefits resulting in other areas. For example, many studies of institutionalization have been concerned only with the emotional adjustment of the individual. The "institutional syndrome" has been described as a condition of apathy, depression, and general estrangement between people which is frequently observed among inhabitants of institutional-type centers. The existence of this syndrome in children attending residential schools for the deaf should be investigated but other aspects of behavior should also be investigated including the educational and vocational development of the child.

## Research Needs and Priorities

The following seven suggestions for research are listed in the order of the priorities assigned to them by the conferees:

1. *Genetics.*

Carefully gathered data on the genetics of transmission of deafness are badly needed. It may be well to depend for basic laws on research in such countries as Denmark, where there is complete "conception to grave" medical care, and a geographically stable population; but data, both on genetics and etiology, are needed for the United States. Pilot surveys in states with relatively stable populations, such as Minnesota, and in states with more mobile populations, such as California, could establish the basis for the design of a comprehensive survey of the total deaf population of the United States.

2. *Institutionalization.*

Studies of various types should be undertaken to determine what effects, if any, the residential school system of education has on the deaf child and adult. The studies should probe deeply into the various aspects of behavior which might be affected by such a system of education.

3. *Counseling pamphlets.*

Counseling pamphlets should be prepared for the various permutations of the "deaf family," (e.g., deaf parents and deaf children, hearing parents and deaf children). The practical, factual content of these pamphlets should be based on research and should be designed to inform the family on the special problems confronting deaf persons, methods of communication that might be used, possibilities for education, and the realistic levels of aspiration that should be set for educational and vocational development.

4. *Family.*

Extensive studies of the family status of the deaf from the sociological point of view should be initiated. These could follow the pattern of the University of Michigan Survey Research Center's *Growth of American Families: II.*

a. Studies should be conducted of the harmonious, "intact" family versus the unharmonious, "unintact" family. The former might be thought of as one where mother and father work together (i.e., the father also learns lipreading and/or manual communication to effectively communicate); the latter where one parent carries the load alone and the other remains indifferent or rejecting.

b. The effect of "immediacy" of parental contact (e.g., the tactile-kinaesthetic approach so often employed by the deaf and those who work with the deaf) should be studied, both as to frequency and mode, and length of delay. This kinaesthetic approach might lead to acting out as opposed to fantasy behavior, for example, as to extreme family centeredness and excessive parental control of a psychological nature in the deaf.

c. How does the family structure of the deaf differ from that of the hearing? Are such differences as exist a function of deafness *per se,* or due to other factors, such as the deaf's being less mobile geographically?

## SUMMARY

The purpose of the conference was two-fold: (a) to determine the important research needs, and the relative priorities of those needs, in the vocational rehabilitation of the deaf, and (b) to bring the research needs to the attention of research workers in many disciplines. This was accomplished by bringing together for several days a large number of research workers representing the fields of psychology, sociology, anthropology, audiology, communication, rehabilitation, and education. These persons were assigned the task of working co-operatively to determine and describe the important research needs in the vocational rehabilitation of the deaf. Some of the participants were persons who had varying degrees and kinds of experience with the deaf, but many were persons who were receiving their first introduction to this specialized field. It was hoped that individuals in the latter group would become interested in the research needs of the deaf through their participation in and contributions to the conference. It also is hoped that the dissemination of the report based on the deliberations of the conference will interest many more such individuals in the field of the deaf as a research area.

### Major Findings

The recommendations for research submitted by the participants in the various sections and listed in the six main chapters of the report represent the major findings of the conference. Examination of these recommendations will reveal several recurring themes, such as the need for measuring instruments, for demographic data on the deaf population, for long-term studies of the processes of concept formation and learning, for programs of adult education, for evaluation of the effects of the various means of communication used by and with the deaf, for evaluation of the effects on adult adjustment of various types of school programs, for determination of needs in vocational counseling, guidance, and placement, and for programmatic research. In particular, the need for programmatic research was strongly expressed by the participants in several sections of the conference. This does not represent a lack of appreciation of the importance of single studies, but rather an expression of the feelings of the conferees that many of the important research problems in deafness are of such nature and scope as to require long-term programs of research involving several disciplines. If the research needs outlined by the conference are to be met, ways must be found to interest research centers and individuals in undertaking systematic programs of research on these needs.

## APPENDIX A

### PROGRAM OF THE CONFERENCE

**Monday, June 20, 1960**

GENERAL MEETING—Hall Memorial Building ..... 9:00 a.m.

"Welcome to Gallaudet College"—
Leonard M. Elstad, LL.D., President

"The Research Conference"—
Gilbert R. Barnhart, Ph.D., Chief, Division of Research Grants

and Demonstrations, Office of Vocational Rehabilitation, Department of Health, Education, and Welfare

"Rehabilitation and the Deaf"—
Boyce R. Williams, LL.D., Consultant, Deaf and the Hard of Hearing, Office of Vocational Rehabilitation, Department of Health, Education, and Welfare

SECTIONAL MEETINGS—Student Union

Section I PSYCHOLOGICAL ASSESSMENT 10:30 a.m.-12:00 noon
*Chairman:* J. Donald Harris, Ph.D., C. W. Shilling Auditory Center, Groton, Connecticut
*Recorder:* Shirley P. Stein, M.A., Gallaudet College, Washington, D. C.

Section II LANGUAGE ..... 10:30 a.m.-12:00 noon
*Chairman:* Richard G. Brill, Ed.D., Superintendent, California School for the Deaf, Riverside, California
*Recorder:* Sara Cook Henderson, M.A., Gallaudet College, Washington, D. C.

LUNCHEON ..... 12:00 noon

MEETINGS—Sections I and II ..... 1:30 p.m.-3:00 p.m.

MEETINGS—Sections I and II ..... 3:30 p.m.-5:00 p.m.

**Tuesday, June 21, 1960**

SECTION MEETINGS—Student Union ..... 9:00 a.m.-10:30 a.m.

Section III SUB-CULTURE OF THE DEAF
*Chairman:* S. Richard Silverman, Ph.D., Director, Central Institute for the Deaf, St. Louis, Missouri
*Recorder:* Shirley P. Stein, M.A., Gallaudet College

Section IV VOCATIONAL DEVELOPMENT
*Chairman:* John F. Kinnane, Ph.D., University Counseling Center, The Catholic University of America, Washington, D. C.
*Recorder:* Sara Cook Henderson, M.A., Gallaudet College

MEETINGS—Sections III and IV ..... 11:00 a.m.-12:00 noon

LUNCHEON ..... 12:00 noon

MEETINGS—Sections III and IV ..... 1:30 p.m.-3:30 p.m.

MEETINGS—Sections III and IV ..... 4:00 p.m.-5:00 p.m.

BANQUET—Student Union ... 6:00 p.m.-8:30 p.m.
"RESEARCH IN THE AREA OF DEAFNESS"—
S. Richard Silverman, Ph.D.

**Wednesday, June 22, 1960**

SECTIONAL MEETINGS—Student Union ..... 9:00 a.m.-10:30 a.m.

Section V EDUCATION
*Chairman:* Edna S. Levine, Ph.D., 170 East 78th Street, New York 21, N. Y.
*Recorder:* Sara Cook Henderson, M.A., Gallaudet College

Section VI FAMILY, GENETICS, AND INSTITUTIONALIZATION

*Chairman:* Boyd R. McCandless, Ph.D., Director, Iowa Child Welfare Research Station, State University of Iowa, Iowa City, Iowa

*Recorder:* Shirley P. Stein, M.A., Gallaudet College

MEETINGS—Sections V and VI ..... 11:00 a.m.-12:00 noon

LUNCHEON—Student Union ..... 12:00 noon

MEETINGS—Sections V and VI ..... 1:30 p.m.-3:30 p.m.

## APPENDIX B

Research Projects in the field of the deaf under grants in the Office of Vocational Rehabilitation, U.S. Department of Health, Education, and Welfare.

1. Study of *Occupational Conditions Among the Deaf,* conducted by the National Association of the Deaf and Gallaudet College; published by Gallaudet College.
2. Study of Success in the Professions Achieved by the Deaf—Alan B. Crammatte, Associate Professor of Business Administration, Gallaudet College.
3. Series of Studies of Work with the Deaf-Blind, conducted at the Industrial Home for the Blind, Brooklyn, N. Y., by Peter Salmon and George Keene.
4. Investigation of Extent to Which Absence of Auditory Sensation Results in More Concrete and Less Abstract Thinking by the Deaf—conducted by the Clarke School for the Deaf, Northampton, Mass.
5. Investigation of the Nature and Extent of Psychiatric Disorders Among the Deaf: A Development of Methods for Treatment, and the Study of Certain Hereditary Factors in Deafness, conducted by the New York Psychiatric Institute, Franz Kallman, Director.
6. Development of a Vocational Interests Test Administrable by Means of Pictures for Use by the Deaf Who Have Not Attained High Reading Skill, conducted by Stephen P. Quigley, Director, Office of Psycho-Educational Research, Gallaudet College.
7. A demonstration project, recently undertaken at Gallaudet College, to establish a psychological counseling facility for the deaf which will serve as a demonstration model for the rest of the country.
8. A book on *The Psychology of Deafness,* by Edna S. Levine, written in part under an Office of Vocational Rehabilitation Research Fellowship.
9. A Study of the Results of the Programs of a School for Deaf Women conducted by the Lexington School for the Deaf, New York City.
10. An Analysis of Communicative Structure Patterns in Deaf Children, by Rev. Fr. Dr. Bernard Th. Tervoort, S.J., Holy Angels School for the Deaf, Saint Michielsgestel, The Netherlands.

# APPENDIX C

## DIRECTORY

### Biographical Information on Conference Participants

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## Conference Meeting at Northwestern University

The thirty-second regular meeting of the Conference of Executives of American Schools for the Deaf was held at Northwestern University, Evanston, Ill., April 3-8, 1960. The attendance was the largest in the history of the Conference. It was also the first time that a meeting of the Conference was held at a university.

The major part of the program was conducted by Dr. Helmer R. Mykelbust of the Department of Speech and Dr. Raymond Carhart of the Department of Audiology and their assistants in Northwestern University. Aside from the panel discussions and business meetings the members of the Conference visited the various clinics at the Northwestern University.

The new officers elected at the Conference were as follows:

*President* ..... William J. McClure, Indiana
*Vice President* ..... Hugo F. Schunhoff, California
*Secretary* ..... Ben E. Hoffmeyer, North Carolina
*Treasurer* ..... Lloyd A. Harrison, Missouri
*Chairman,* Committee on Certification ..... Howard M. Quigley, Minnesota
*Secretary,* Committee on Certification ..... Richard G. Brill, California

The new members of the Conference Committees are published on the back of the cover.

During the three years Dr. Marshall S. Hester served as president of the Conference many administrative changes were made which helped to strengthen the working relations within the organization.

# The Psychological Effects of Deafness

HELMER R. MYKLEBUST, Ed.D.
*Professor of Language Pathology and Psychology, Northwestern University*

The work which is being done in centers around the world is gradually clarifying the relationship between deafness and psychological processes. Such study entails the psychology of normal sensory functioning as compared to the psychology of sensory deprivation. Specifically in reference to deafness it entails the psychology of hearing as compared to the psychology of non-hearing. First we shall consider some factors of normal sensory behavior.

The five primary senses of man can be divided into "close" and "distance" senses. Such a classification is based on the extent to which the sense permits man to project himself into his environment. For example, gustation can be used to explore only the environment which is in close proximity to the body, while vision makes it possible to explore the environment a considerable distance away from the body. On this basis hearing and vision are the primary distance senses and the tactile sense, olfacation and gustation are the close senses. It is interesting to note that the close senses are most ready for use, that is, are most fully developed at the time of birth. Hence these senses can be referred to as the most primitive, as being more immature as compared to the distance senses of hearing and vision. The new-born infant is dependent mainly on the close senses. Full use of the distance senses is possible only with further growth and development. From studies of depth perception (stereoscopic vision) it is apparent that full use of seeing is not attained until around seven years of age. Seeing is possible at the time of birth but full maturity of this process is attained only considerably later.

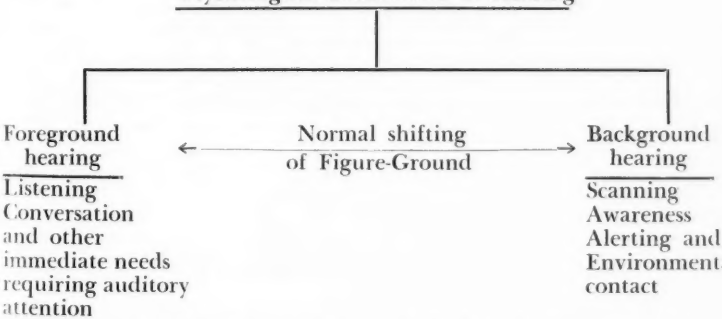
Similar evidence is not available for audition. It is evident that hearing is possible at the time of birth, but like vision, full use of hearing is not possible until later, perhaps occurring at about the same age as full use of vision. Piaget (12) has shown that a three month old can coordinate hearing and vision; when he hears a sound he will turn his head toward the source of the sound. However, the ability to listen for and indicate the threshold of audibility for adults is possible only much later. These examples are given to emphasize that the distance senses attain full usefulness only after the total human being has attained a substantial degree of maturity. In the case of the deaf, and similarly for the blind, one of the distance senses is deprived. This inherently and automatically causes the individual to be more dependent on the remaining distance sense and on the close senses. Study of the psychology of sensory deprivation includes the question of how such a shift in sensory behavior is accomplished and what might be the effects on learning and adjustment.

Before exploring these questions further it is of some importance to compare the distance senses, hearing and vision. It is interesting and highly intriguing to note the natural differences in these senses. For example, vision is directional, while hearing is non-directional; hearing scans the total environment in all directions simultaneously. Further

more, hearing is mandatory. We cannot cease hearing even while asleep. Nature provided for one of the distance senses to be functioning constantly and the advantages to self-preservation are obvious. Many other differences could be mentioned; we can hear in the dark, through walls and around corners. Because of the nature of the sense of hearing as compared with vision, hearing can be defined as the basic contact, scanning and alerting sense; it is hearing that keeps us in contact with our environment at all times. Hence it can be referred to as the primary background sense. In contrast, vision is the primary foreground sense. It is focused on that which is in the mind. So while vision is directed to that to which the mind is attending, hearing scans the environmental field. Under certain circumstances, such as when listening intently, audition may become foreground and vision background. However, certainly a psychologically significant aspect of deafness is that supplementary use of hearing and vision is impeded. The deaf individual is forced to use his remaining distance sense for both foreground and background purposes. It should be remembered in this connection that vision by nature is not an efficient scanning sense. Each time the deaf individual must look up to scan he interrupts his attention to that in which he is mainly occupied.

Another factor must be mentioned before considering the more direct psychological effects of deafness. This pertains to the various dimensions of hearing. As indicated above, hearing must serve both foreground and background purposes. While it is the primary background sense as compared to vision it must also serve the purpose of listening, which is a foreground use of audition. Furthermore, at times it must serve these purposes simultaneously and at times alternately. This is shown schematically in Figure I.

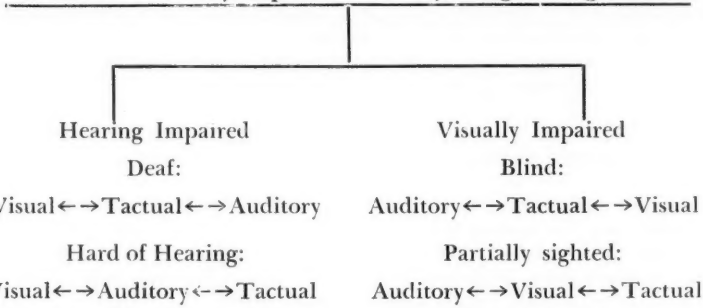
**FIGURE I**
**Psychological Dimensions of Hearing**




Of importance in the psychology of deafness is the fact that even a moderate hearing loss (of the magnitude of about 50 db) seriously impairs the function of background hearing. The loss of this function in itself has considerable bearing in terms of adjustment and maintenance of homeostatic equilibrium between the individual and his environment. Furthermore, clinical experience and some scientific evidence indicate that even when background sounds can be heard by those having impaired hearing (when such sound is of sufficient intensity to be heard by them) it is no longer reacted to as background sound but

rather is treated as foreground. In other words, the hearing impaired person, although he has useful residual hearing, loses an important psychological dimension of audition. He cannot normally use hearing in a foreground-background manner; he is limited to the dimension of foreground hearing. Hence, all sound, whether or not it is of relevance to the immediate circumstances of the individual, must be given equal attention. That this is of significance in the behavior of those referred to as deaf and hard of hearing is indicated by the findings given below in the discussion of personality. Various types of psychological studies are revealing that just such alterations in the sensory functions cause concomitant alterations in the psychological organization of individuals having sensory deprivation. This is illustrated schematically in Figure II.

**FIGURE II**
**The Effect of Sensory Deprivation on Psychological Organization**




As this illustration suggests in those with profound deafness the psychological organization (perceptual integration, etc.) is mainly in terms of visual experience, with supplementation mainly from the tactual avenue, including vibratory sensation. In the blind the pattern of psychological organization is mainly in terms of auditory experience with the tactual avenue again playing a leading supplementary role. Even when only moderately severe sensory deprivation is present, there is reason to assume some shift in psychological organization so that the hard of hearing become more visual and the partially sighted more auditory. It is the task of the psychologist concerned with sensory deprivation to explore the nature and extent of such alterations in psychological processes and structure. Through such knowledge we can expect to derive laws of learning that pertain specifically to those whose experiences have been significantly altered by sensory deprivation.

### The Effect of Deafness on Intellectual Development

An important way to study the consequences of sensory deprivation is to ascertain its effects on mental development and intellectual processes. The first significant question raised in this connection was: does deafness cause mental retardation? The first psychologist to give major attention to the deaf, Dr. Rudolph Pinter (13), posed this critical question. He, through prodigious effort of his own and that of his students, studied this problem extensively. His conclusion was that the average deaf child in public residential schools in America was mentally retarded. His work stimulated interest and controversy which

continues even today. Pintner's contribution to the psychology of deafness is noteworthy; however, we are not in the present era primarily concerned with the question of whether the individual having profound deafness from early life is quantitatively equal intellectually to his hearing brother and sister. A number of studies using individual, non-verbal tests have indicated little or no difference in mental ability between the deaf and the hearing. The greater problem and challenge at this time is that increasingly psychological study is revealing that deafness can influence mental processes and therefore we cannot assume that quantitative equality means qualitative equality. The work of Oléron (8) is noteworthy in this connection. He has pioneered in indicating the effect of early life deafness on intellectual processes. We also have been interested in this problem.* One of our early studies pertained to the alteration of visual perceptual processes in deaf children (6). Various other studies have been done, and have been published elsewhere (7). Because space is limited only a few general findings can be presented here. It will be noted that these findings can be viewed from the frame of reference given above regarding the psychological significance of sensory deprivation. First we shall consider some studies in which the memory abilities of deaf and hearing school children were compared. The results are shown in Figure III.

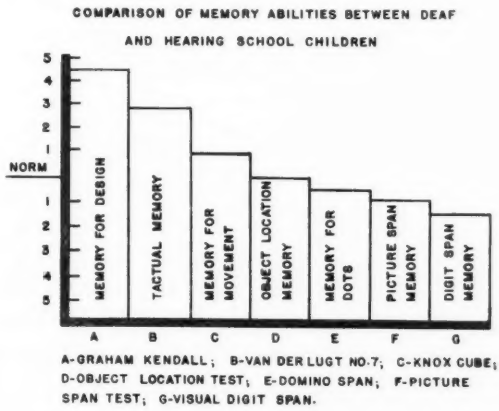



**FIGURE III**

**A comparison of the memory abilities of deaf and hearing school children**

It is apparent that deaf children do not show equal ability as compared to the hearing on the various types of memory studied. On some abilities (A, B, C) the deaf are superior to the hearing. On one

* Acknowledgment is made to the following who served as graduate assistants and whose studies helped clarify various aspects of the psychology of deafness referred to in this discussion: Francis Blair, John Boyd, Milton Brutten, Mary Rose Costello, Robert Frisina, Carl Fuller, Norman Gunderson, Arthur Neyhus, Ellen Spencer and Rogers Wright.

Indebtedness is expressed to my colleague, Miss Ann M. Mulholland, for her critical comments and suggestions.

test (D) they are equal and on the remaining tests (E, F, G) they are inferior. These studies suggest that deafness has an impact on memory, but that the relationship between deafness and memory varies according to the nature of the mental task involved. It must be emphasized, also, that in the case of one test (B) a different sensory channel was used as compared to the other tests. For test B the child was blindfolded and received the information (stimulus) only tactually; in all of the other tests the child received the stimulus through vision.

Psychologists have been studying memory for over a century. However, the significance of each of the senses in relation to memory, especially the auditory, visual and tactual senses, has not received due attention. Study of the deaf might add substantially to our knowledge of the psychology of memory in general and to our knowledge of the psychology of deafness. Another factor should be mentioned. The work of Penfield (11) and other neurologists has added greatly to our understanding of memory in terms of brain mechanisms. This work has indicated the important role of audition in the neurology of memory. When we look at the results given in Figure III we find that on those tests which require memory for a design, for a maze, or for movements, the deaf are superior to the hearing. It is difficult to hypothesize that auditory experience is necessary or helpful in the solution of the problems presented by these tests. Thus it seems that if the test is dependent mainly, or perhaps exclusively, on visual experience, the deaf have the advantage as compared to the hearing. Likewise, when the person is forced to depend upon tactual experience, more or less exclusively, the deaf again have the advantage. It seems that if the memory task, visual or tactual, does not lend itself to auditory associations, the deaf are superior as compared to the hearing. This highlights the shift in psychological organization which results from the sensory deprivation of deafness. The deaf person is more dependent on vision and tactual sensitivity for maintaining an adequate relationship with his environment. Hence, his psychological processes are organized more in terms of the information he receives from these sensory channels, with the result that under certain circumstances he can use visual and tactual memory more effectively as compared to the hearing.

This reasoning, or interpretation, does not seem adequate in all instances. When we look at the results for the remaining memory tests, and when related studies are considered, (see Figure IV) other factors seem to be operating. These include the question of whether the mental task is mainly concrete or mainly abstract in nature and whether symbolic behavior is entailed. In this connection it is interesting to note that on memory for the location of objects the deaf and the hearing were equal. Whereas in memory for dots, for picture span and for digit span the deaf were inferior to the hearing. The reason for the inferiority on memory for dots on dominoes is obscure and warrants further study; this process might be influenced rather directly by the fluidity and level of symbolic behavior. Also, it might be explained by visual perceptual factors as discussed by Myklebust and Brutten (6). Inferiority on the picture span test seems to be explained by the deprivation of auditory experience. Pictures represent daily life activities which typically include sounds. Furthermore, the pictured experiences might be remembered more readily if they are symbolized, that

is, naturally associated with words. Because of the deaf child's limited verbal facility this is more difficult for him.

We have studied visual memory for digits in various ways over a period of several years. Pintner and Paterson (14) first revealed that digit symbol learning was markedly inferior in the deaf as compared to the hearing. Auditory digit span was first included in a mental test by Binet (2) and all standard tests of mental ability since have included it. Our interest in visual digit span ability arose through a clinical observation that ability on this test often correlated highly with reading and other aspects of educational achievement. Several of our studies have confirmed this observation. In fact, this test sometimes predicts ability to learn academic materials more reliably than the total intelligence quotient derived from a battery of performance tests. As can be seen in Figure III, deaf children showed greatest inferiority on this test as compared to the hearing. This pattern has been consistent in all of our studies. Presumably when the task entails memory for symbols (numbers) it is much more difficult for those having profound deafness from early life. Furthermore, some of the studies suggest that deaf children remember digits backward more readily than digits forward. This would be in contrast to the hearing where the reverse is true. Perhaps memory processes which are mainly auditory do not function in the same manner as those which are mainly dependent upon visual experience. Again, it must be emphasized that the significance of the individual sense modalities in relation to memory needs further investigation. At this time it seems reasonable to conclude that deafness influences memory processes and that this psychological effect of deafness should be exploited more fully in terms of the implications for learning and adjustment.

During the past several years there has been a growing interest in the effect of deafness on abstract reasoning and conceptualizing processes. This has been demonstrated especially by the work of Oléron (9). Pellet (10) also has done some interesting work in this connection. We must, of course, come to some agreement as to what is meant by abstraction. Oléron's definition seems to be critical and useful. He has emphasized that the more the behavior is limited and restricted to the stimulus, the more concrete it appears. Hence, if solution of the problem is possible by observation and synthesis of the stimulus, such as in the Block Design test, it might be classified as a concrete type of problem. On the other hand, if the problem assumes deduction from the observable aspects of the stimulus, such as in the Progressive Matrices test, it might be defined as a more abstract type of problem. Another type of categorization of mental tests is the extent to which they depend mainly on perceptualization as contrasted with conceptualization. When a problem can be solved by attention only to the observable, it can be viewed as being more dependent upon the perceptual level of behavior, whereas, when deductions and generalizations, that is, when principles must be recognized, it can be viewed as entailing a more abstract level of behavior.

Some results are given in Figure IV, comparing the deaf and hearing on certain mental tests. The results were arranged according to the tests on which there was no difference between the groups, to those on which the deaf showed increasing inferiority. This became an interesting graphic illustration of the mental abilities of the deaf. These

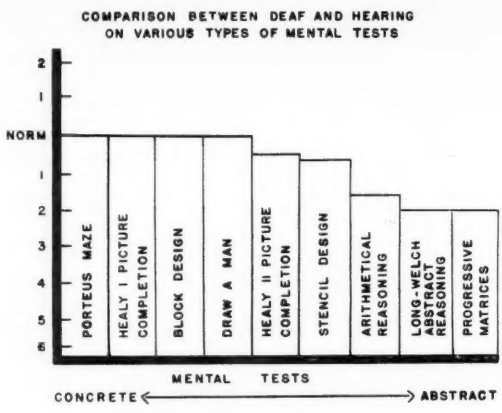



**FIGURE IV**
**Comparison between deaf and hearing on various types of mental tests**

studies included both children and adults. Also various types of deaf persons were studied, including deaf college students, retarded deaf, deaf children who score at the average level on most performance tests but who manifest poor academic learning, and average for the deaf school children. In some instances substantial numbers were included. For example, in the study of the Draw a Man Test there were 800 children.

When the results were arranged as seen in Figure IV, and when they were analyzed according to the definition of concrete-abstract as discussed above, it was apparent that, in general, the deaf were inferior mainly on tests requiring abstraction. Taken alone, however, this appears to be an over-simplification. For example, the Draw a Man Test is not an illustration of the concrete type of test because there is not an observable stimulus in the same sense as in the Block Design test. This raises an interesting and perplexing question. We must inquire whether when the deaf score quantitatively equal to the hearing, does it mean that the psychological implications are the same? For example, when the deaf score equal to the hearing on the Draw a Man Test, can we assume that the mental processes sampled are identical? We have explored this question in detail and have found that although the deaf score equal to the hearing, the implications often are far from equal. This has been shown especially by correlation techniques. The correlations between Draw a Man scores and various other measures are significantly different for the deaf and hearing even though the intelligence quotients are equal. This suggests that a deaf child and a hearing child might draw upon different mental processes while solving the same problem. This appears to be an important factor in the psychology of deafness. This is confirmed by clinical experience because the psychologist working with deaf children soon learns that he cannot make predictions for learning from his test results in the same way as for hearing children.

On the basis of the results in Figure IV we have concluded that deaf children are equal to hearing children on the more concrete

type of intelligence test but that this quantitative equality does not imply qualitative equality. Furthermore, when the test requires abstracting a principle, the deaf child and adult is inferior to his hearing counterpart.

## Deafness and Personality Development

Progress has been slow in the study of the effects of deafness on personality structure and development. Actually only a few studies have been made since the work of Pintner (14) and his associates. Pintner's work entailed the use of questionnaires, which was the characteristic technique in that era. In general all of his studies indicated that the person deaf from early life had more adjustment problems as compared to the hearing. In more recent years there has been a trend to use projective tests in the study of personality. Such tests have been used in the study of deaf persons, notably by McAndrew (4), Levine (3) and Bindon (1). Two of the widely used projective tests, the Rorschach and the Thematic Apperception Test, are highly dependent upon verbal responses. This limits their usefulness for some deaf people. The Make a Picture-Story Test (1), used by Bindon, has the advantage of being substantially free from dependency upon verbal facility. This is largely true also of the Szondi (16) which we have used experimentally in a study of deaf children. Undoubtedly one reason for the slow progress in the study of personality of the deaf is that non-verbal techniques have not been available. This circumstance is changing. Techniques which hold real promise have been developed and await the interest of the psychologist concerned with the problems of the deaf.

In a rather extensive study of the personality of individuals deaf from early life we used a personality inventory type of test. The test, the Minnesota Multiphasic Personality Inventory (5) has been used widely in the United States. Furthermore, we decided to study a select group of adults, the population at Gallaudet College, a college for deaf students. This population is made up mainly of persons who sustained profound deafness in early life, thus giving us some standardization of the age of onset. For comparison, to note the effects in a group who sustained deafness much later in life, we studied a group of hard of hearing adults. While the effects of deafness in the later onset group were much less marked, striking similarities did occur.

The Minnesota Multiphasic Personality Inventory (MMPI) consists of nine Scales, each scored separately. These Scales are Hypochondriasis, Depression, Hysteria, Psychopathic Deviate, Masculinity-Femininity, Paranoia, Psychasthenia, Schizophrenia, and Hypomania. The scores for the deaf and hard of hearing are shown graphically in Figure V.

It is apparent from these results that a difference was found between the sexes for both the deaf and the hard of hearing; the females have the advantage in adjustment in both instances. This sex difference was noted in other studies which we have made. It seems that deafness does not cause an equal problem to the boy as compared to the girl, or the man as compared to the woman. Another general implication of the findings is that even moderate deafness sustained in adulthood might have some effect on emotional attitudes and feelings, especially in the case of the male. Early investigators postulated that when deaf-

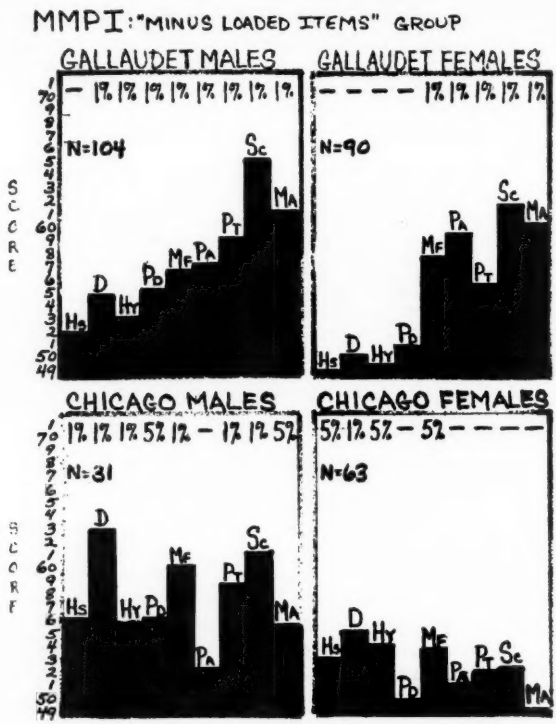



**FIGURE V**

**A comparison between deaf (Gallaudet) and hard of hearing (Chicago) adults on the Minnesota Multiphasic Personality Inventory**

ness occurred in infancy, the individual would have little or no auditory experience and no realization of its importance. On this basis, the opinion went on, there would be no effect on the personality. Unfortunately these findings are to the contrary. The results indicate that when deafness occurs in early life there is considerable impact on personality dynamics and structure. We shall now briefly analyze the nature of this impact and compare it with the hard of hearing.

The (Gallaudet) deaf males had significant maladjustment scores on all of the Scales except Hypochondriasis. The deaf females had significant maladjustment scores on five Scales; Masculinity-femininity, Paranoia, Psychasthenia, Schizophrenia, and Hypomania. The most deviant score for the deaf males and females was on the Schizophrenia Scale. The hard of hearing males also had a very deviant score on Schizophrenia. Otherwise the scores for the deaf and the hard of hearing are different in several respects. The hard of hearing show worry about bodily functions and are depressed as compared to the normal. The deaf on the other hand score most favorably on these aspects of personality, but deviate significantly in terms of feelings of detachment

and isolation; this is indicated especially by their score on Schizophrenia.

It is necessary to consider the validity of these results. First, it might be mentioned that intensive statistical analyses have not indicated that the deaf group had difficulty in comprehending the language of the test. Other, more basic problems have been revealed, however. Much study has been given to the question of why the deaf scored so markedly maladjusted on the Schizophrenia Scale. An item analysis was made on the more than 500 items in the MMPI. Interestingly on the item, "I am easily awakened by noise," 50% of the deaf replied in the affirmative. This response was given by only a few (about 10%) of the hard of hearing; this is the expected response as compared to the normal. We must raise the question as to why so many of the deaf replied that they were easily awakened by loud noises. This, it seems is a critical question in regard to the interpretation of these results. Perhaps this response is quite natural for a deaf person. He is aware of loud noises through feeling, through tactual-kinesthetic-vibratory sensations. We found under intelligence above, that the deaf were superior to the hearing in tactual-motor memory. The deaf person has learned to rely on vibratory sensation to alert him concerning many occurrences in his environmental field. Therefore, may he not have learned that if he does **not** attend to such sensations, he might be "run down by a truck." The phrase "run down by a truck" is used in a figurative sense to illustrate that it is necessary for the deaf to respond to sensory stimulation in a manner different from the normal. Only by so doing can they maintain the contact with the environment which is so necessary in daily life. A deaf friend who works in a factory has asked me why he is so readily startled by loud sounds, which he feels, when his hearing co-workers pay no attention to the sound. Is it not the same question as that raised by the responses of the deaf to the item on the test relative to being disturbed by loud sounds? It seems that the reason for this is that the deaf must learn to monitor their world differently, and be alert to signals which the hearing person has learned it is safe to ignore.

What does this mean in terms of these personality test results? It indicates that extreme caution must be used in the interpretation of the results. Furthermore, the response of a deaf person cannot necessarily be interpreted according to the norms for a hearing person. While such norms must be used it is necessary for the psychologist to be aware of the need for the deaf to behave differently under certain situations and circumstances. Therefore, in general, we have interpreted the high scores on the Schizophrenia Scale as not necessarily meaning that the deaf are schizophrenic, but that as compared to the hearing they feel detached and isolated from other people. Such detachment and isolation, at least to some extent, might be a natural consequence of deafness and not represent a condition of mental disease.

### Deafness and Language Behavior

When deafness occurs in early childhood, especially before the age of three or four years, it causes an obvious imposition on language function. This so-called lauguage problem of the deaf child is so well known that we shall not pursue description of it here; it has received more attention than any other single problem associated with deafness. Because of the importance of language in human behavior,

this is as it should be. However, one wonders just how much progress has been made in the scientific definition and understanding of this problem in the past half century. In the United States many claims for the success of their method have been made by those who use only an oral approach. Counter claims have been made by those who prefer the combined method, in which both oral and sign language are used. Similar claims and counter claims seem to have been made by various groups in other countries. Inherent in this controversy has been the assumption that use of the sign language would deter acquisition and use of speech.

About ten years ago, in an attempt to explore this hypothesis, we inaugurated a study of language development in deaf children. Approximately one thousand children were studied from the age of seven through seventeen years. One finding of this investigation is that there is a serious language retardation in the deaf child, irrespective of whether he has been taught by the oral or the combined method. In fact, when compared statistically no difference in language usage was found between these groups. Possibly the language problem has been obscured and over-simplified by this issue of methodology. Perhaps we should be viewing the problem from a different perspective. For example, should we be considering the nature of the inner language process in the deaf child? This possibility was given impetus by Vigotsky (17) a number of years ago. Such a consideration would lead to study of speech-reading as a receptive language system. The next logical procedure would be to help the deaf child convert a visual symbol (the word seen on the lips) into a tactual kinesthetic symbol, that is, into the spoken word. This would entail recognition of the fact that the deaf child uses one monitoring system for receptive language (speech-reading) and another one for expressive language (speech). This is the frame of reference which has been paramount in our study of the language behavior of deaf children. Some of the results are presented in Figures VI, VII and VIII.

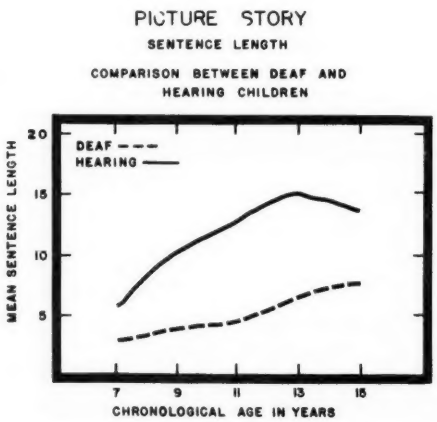



**FIGURE VI**

**A comparison between the deaf and the hearing on sentence length**

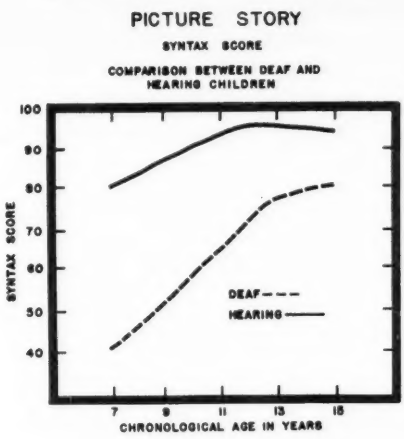



**FIGURE VII**

**A comparison between the deaf and the hearing on syntax and sentence structure**

First a test of written language was devised; it is called the Picture Story Language Test. It consists of a picture of a child at play. The picture was carefully planned and posed, and has proved highly satisfactory as a stimulus. The subject is asked to write a story about what he sees. The test was administered to a large sample of deaf children and has been standardized on normal children. (Results also will be available for children who are aphasic, dyslexic, mentally retarded and emotionally disturbed.) Three specific scoring procedures have been devised; one is for scoring syntax and general sentence structure, one is for scoring the extent to which the child shows concrete versus abstract thought, and one is for scoring sentence length. In the field of linguistics it has been found that sentence length is a reliable measure of the complexity of the language used.

In Figure VI is presented a comparison of the scores for the deaf and the hearing on sentence length. It is apparent that the deaf are significantly inferior to the hearing. This is illustrated statistically by the mean sentence length for the nine-year old deaf child being 3.74, while for the nine-year old hearing child, the mean was 10.09; at eleven years the mean for the deaf was 4.98 and for the hearing it was 12.09. This emphasizes the fact that early life deafness restricts language acquisition and usage.

The psychologist, language pathologist and educator are interested, not only in the limitations of the language found in the deaf, but in the **nature** of the language problem. Why are there language errors that are so characteristic that they can be referred to as "deafisms"? The syntax analysis was an attempt to secure this type of information. Several factors were scored, including correct use of tense, parts of speech, omissions and substitutions. The results are shown in Figure VII. In this comparison, too, the deaf are markedly inferior to the hearing. It is interesting that the normal child attains about 95% accuracy in syntax by eleven years of age. The deaf do not attain

anything comparable even at adulthood. Further analysis of these data revealed the most common types of errors made by the deaf (7).

The third analysis consisted of the extent to which the child manifested concrete-abstract thought. In general if the child described only that which was observable in the picture it was scored as being concrete. If he inferred a plot, or drew a moral, or made other such inferences, he was scored as engaging in abstractions. This scale consisted of several gradations from the most concrete to the most abstract. Language usage was ignored; interestingly, correlation of these scores with the language scores, while positive, was not unusually high, indicating that a factor, or factors, other than correctness of language was being measured. The results are presented in Figure VIII.

These results show that the deaf were significantly more concrete in thought and ideation as compared to the hearing. This was not unexpected. However, it was unexpected that the deaf child might use abstract thought even though he scored low on language usage. In other words, this analysis did not indicate that the total problem of concreteness in the deaf can be explained on the basis of the language deficiency. Other factors seem to be operating. Perhaps profound deafness results in a degree of concreteness irrespective of the level of language attainment.

These findings seem to suggest another challenging possibility. We have assumed that if the language behavior of the deaf could be improved there would be a concomitant improvement in the use of ab-

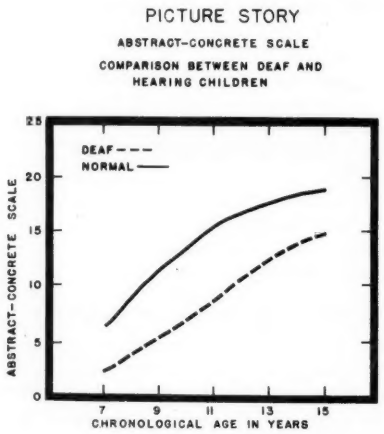



**FIGURE VIII**

**Comparison between the deaf and the hearing on the use of concrete-abstract thought in the writing of a story**

straction. This can be viewed as a valid assumption. However, is the reverse of this assumption equally valid? If we can raise the level of abstract behavior will there be a concomitant improvement in the use of language? Are these not reciprocal functions and therefore, might it not be possible to raise the level of either by emphasizing the development of the other? Some of the training techniques used in the

education of the deaf might be said to emphasize the concrete. It is suggested here that techniques might be developed which emphasize and require the drawing of conclusions, the drawing of inferences, and the abstracting of principles. These techniques would require more than the observable for the solution of the problem, be it a simple game, or some type of more serious question. Perhaps this type of training in abstraction should be given equal emphasis to that now accorded to language training.

**Summary:** A psychology of deafness is developing. The future is challenging and offers many possibilities. Evidence has been presented which indicates that sensory deprivation alters the psychological response mechanisms of the individual. This has been found in the areas of intellectual capacities, personality and language behavior. There seem to be important implications for the "laws of learning" for those who have sensory impairments.

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# The Kentucky School for the Deaf Passes Under the Control of the State Board of Education

*George Morris McClure, Litt.D., Ped.D., Kentucky School for the Deaf, Danville, Ky.*

On the first day of July, 1960, the Kentucky School for the Deaf, having been governed for one hundred and thirty-seven years by boards composed of leading citizens of the state, serving without pay, passed under the control of the State Board of Education, a paid body.

The Kentucky School was the first *State* school in the United States. The bill for its establishment was introduced in the Kentucky Assembly by General Elias Barbee whose deaf daughter, Lucy, became the first pupil of the school. With a bright attractive deaf maiden as an object lesson before the members, the bill passed with but little opposition. There was a tendency at the outset to model American schools after the older ones in Europe where the dominant idea was that such institutions were charities, to be supported by contributions from philanthropic contributions. However, when General Barbee called upon his friend, Judge John Rowan, Chief Justice of the Kentucky Court of Appeals, to write the charter of the new school, the Judge rejected the European idea altogether and wrote a charter giving the deaf child substantially the same rights and privileges as the hearing one. Perhaps, as he wrote, the Judge had a vision of the fair young daughter of his friend and felt that she deserved a school with a status as good as the best.

The state treasury was placed in support of the school, the money coming from the school fund. The trustees were empowered to elect a president, and by a happy inspiration the management was placed under the Board of Trustees of the state's leading educational institution, Centre College, where it remained for almost fifty years. The Centre College Board was composed of some twenty members so a Committee of six, with the eminent surgeon, Dr. Ephraim McDowell, at its head, was selected to have direct charge of the school, but its affairs were always considered at the full meetings of the Board. The connection with Centre College meant much to the school in those early years, helping to fix its place in the minds of the public as a strictly educational institution, and bringing to it a group of influential friends who have never failed to rally to its support in time of need.

No outstanding educator familiar with the education of the deaf was available at that early date for the position of President so the selection of one was deferred and a "Superintendent" was installed instead. Oddly enough, the Superintendent received no salary. The money paid by the state for maintenance was turned over to him, and he ran the boarding department as a private venture. What money was left, if any, at the end of the session was his pay for his services; he was responsible for the care and oversight of the children at all times when not in school. The system was one to induce "plain living and high thinking," but the Superintendent, the Rev. John Rice Kerr, was not one to take advantage of the children and they probably fared as well as he.

The school has prospered under its unpaid Boards, for Governors have been conscientious in selecting only high grade men for positions on them. There have been many instances of long service, and fre-

quently sons have succeeded fathers down to the third and fourth generations. Fortunate is the school that can claim such traditional friends.

Under the direction of the Centre College Board, John Adamson Jacobs made such a splendid record at the head of the school that there was never any serious thought of changing the plan of management. But after Mr. Jacobs' death in 1869 the point was raised that Centre College was a denominational school and as such the doctrine of "Separation of Church and State" called for a reorganization. In 1870 the school was removed from the control of Centre College and given a separate Board composed of twelve members appointed by the Governor, and serving for terms of six years. But under a recent reorganization the number of members was reduced to nine and the terms to four years, but in practice the terms ran to death, resignation, or the appointment of a successor.

The 1959-60 session of the Legislature transferred the school to the management of the State Board of Education, effective July 1 of this year. This Board has charge of all the State's schools from the primary grade up to the college level, but not including the State University or Teachers Colleges. It has done a most efficient job of lifting the educational standard of the state, and of improving the status of the teachers. The change is regarded as a promotion.

The Board has retained the entire staff of the school for the deaf for the coming session. Substantial increases in salary were made in many instances to be taken care of by a sales tax that went into effect July 1 of the present year.

At a meeting of Superintendent Charles B. Grow with the members of the new board they assured him of their deep interest in the school and their purpose to work for its advancement, and to provide adequately for its needs.

As we scan the roll of those who served on the Boards of the Kentucky School for the Deaf, we find the names of many of the state's most distinguished sons—soldiers, statesmen, diplomats, scholars, professional men, leaders in many fields. This is the end of an era; before we bid good-bye to these tried and true friends we lift our hand in salute—"Well done, good and faithful servant!" But we have found new friends, able and capable, under whose guidance we look forward to a period of enduring prosperity and success.

# HONORS AND AWARDS

## Award to Elwood A. Stevenson

The Edward Allen Fay Award, established by the Conference of Executives of American Schools for the Deaf, in honor of Edward Allen Fay, distinguished educator of the deaf in the United States during the latter part of the nineteenth century and the early part of the twentieth century, was awarded to Dr. Elwood A. Stevenson, Supt. of the California School for the Deaf, Berkeley, who retired in August, 1960, after a lifetime in work with the deaf. The award was presented by Dr. Marshall S. Hester, Supt. of the New Mexico School for the Deaf, and President of the Conference of Executives of American Schools for the Deaf at the meeting of the Conference of Executives at Northwestern University in Evanston, in April, 1960.

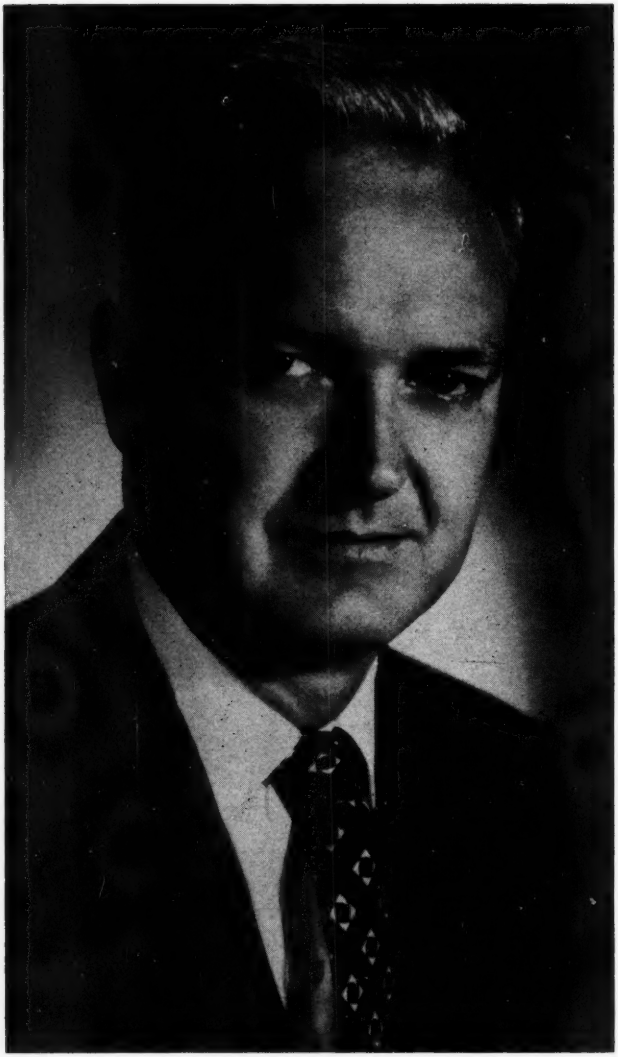
## Award to Helmer R. Myklebust

The Award of Merit, established by the Conference of Executives of American Schools for the Deaf, was awarded to Dr. Helmer R. Myklebust, Professor of Language Pathology and Psychology, Northwestern University, and a distinguished educator of the deaf. The award was presented by Dr. Marshall S. Hester, Supt. of the New Mexico School for the Deaf, and President of the Conference of Executives of American Schools for the Deaf at the meeting of the Conference of Executives at Northwestern University in Evanston, in April, 1960.

**Edward Allen Fay Award**

**ELWOOD A. STEVENSON**

**Conference of Executives of American Schools for the Deaf, 1960**



**Award of Merit**

**HELMER R. MYKLEBUST**

**Conference of Executives of American Schools for the Deaf, 1960**

## Certificate Presented to Dr. George McClure

At the regular meeting of the Conference of Executives of American Schools for the Deaf, held at Northwestern University, Evanston, Illinois, in April, 1960, Dr. Edmund B. Boatner, chairman of the committee appointed to design and print a certificate of award for teachers of the deaf who have rendered long and devoted service, reported that the work of the committee had been finished and the certificates were ready for distribution.

This award was brought forth through the joint cooperation of the Conference of Executives of American Schools for the Deaf and the American Instructors of the Deaf.

At the meeting of the Executive Committee of the Conference in Washington, D. C., in January, 1960, "It was moved by Dr. Boatner, seconded by Dr. Craig and carried that the Executive Committee of the Conference award Dr. George M. McClure, Danville, Kentucky, the first Certificate in recognition of his long and distinguished service."

The first certificate was awarded to Dr. George Morris McClure, teacher emeritus of the Kentucky School for the Deaf, Danville, Kentucky, on May 1, 1960, at the Kentucky School. Dr. McClure, who is 99 years old, had been actively connected with the Kentucky School for the Deaf for fifty-three years. On being handed the first certificate from the Conference by Dr. Edmund B. Boatner, chairman of the committee, Dr. McClure gave the following acceptance speech.

Mr. Chairman and Dr. Edmund B. Boatner, Supt. of the American School at Hartford, Conn.

Any educator from the Hartford school is always cordially welcome here in Kentucky, for, as you nave just pointed out in your admirable historical paper, the ties between the Hartford and the Danville schools are many and warm. You have a special welcome today since your mission is to bestow honors on the members of the "Old Guard" whose long and devoted service has earned a rest. Some of these are here to greet you today, but there are gaps in the ranks where old associates have "drunk their cup a round or two before" and have already received their Award from the hand of the Master.

It was a most gracious act on the part of the Conference of Executives of American Schools for the Deaf and of the Convention of American Instructors of the Deaf, to set up this system of Awards,—it touches the hearts of the veterans to discover that neither they nor their service is quite forgotten. On behalf of the retired teachers of the nation I express our thanks and our deep appreciation of this fine action of the generation that has followed us.

In the contests of the ancient Grecian Olympiads the prize was a simple laurel wreath but the victor esteemed no effort, no toil too great if he might win it. This Award shall be to us, the retired teachers, our laurel crown, reminding us of the days of our pride when we too, had a share in the world's work—and loved it. Looking back over the years we are conscious that the work was hard, difficult, and the results all too often below our expectations. But we like to believe that our failures were not from low aim or lack of effort—we gave our best.

We, the teachers of yesterday, realize that the world grows greater as it goes forward—"Time makes ancient good uncouth." Doubtless those who come after us will discover new and better approaches to the problems that baffled us. But we will not grudge them their greater successes for we, too, had our hour, and left the good work better than we found it—we hope. To those who have taken our places we wish God speed.

## GALLAUDET COLLEGE HONORS

In connection with the ninety-sixth Commencement Exercises on Monday, June 6, 1960, Gallaudet College, Washington, D. C., conferred five honorary degrees. The citations were as follows:

### Maxine Tull Boatner

Maxine Tull Boatner graduated from Millsaps College with ambition for both writing and teaching, and with pleasant childhood memories of a deaf couple who lived and taught in her home town of Jackson, Mississippi. Both ambition and memory were to determine much of her later career. She received her master's degree from Gallaudet College in the education of the deaf, taught at the Mississippi School for the Deaf, and married a man who was to rise to prominence as superintendent of the American School for the Deaf founded by Thomas Hopkins Gallaudet at Hartford, Connecticut. She continued her studies at Yale University, where she received the degrees of master of arts and doctor of philosophy. Her talents as a writer, teacher of the deaf, and researcher were brought into play by her interest in the early Gallaudet family, whose descendants were still in Hartford and who gave her the private papers of Edward Miner Gallaudet, the founder and first president of this college. Her remarkable biography of this remarkable man has brought home to us all the courage, intelligence, and foresight that established higher education for deaf persons in this country.

### Marshall S. Hester

Marshall S. Hester is now concluding his thirty-third year in the education of the deaf. A graduate of Millsaps College, he came to Gallaudet for his master's degree and has since won a reputation as one of the ablest men in his field. He has taught at the Iowa and Berkeley, California, Schools for the Deaf; has served on the faculties of San Francisco State College, the University of California, and the University of New Mexico. Since 1944 he has been superintendent of the New Mexico School for the Deaf. By his energy and his openness to new ideas, particularly in electronics and in hearing aids, he has made possible a more effective education for deaf children; and as a writer for professional journals and as President of the Conference of Executives of American Schools for the Deaf, he has advanced his proposals with great persuasiveness. All persons engaged in the education of the deaf have reason to be grateful for his leadership.

### Petra Fandrem Howard

Petra Fandrem Howard, after her graduation from Gallaudet College in 1912, continued her studies at the University of Minnesota, and in 1915 was appointed chief of the newly established Minnesota Bureau

for the Deaf. In that bureau she began, and continued there and in the Minnesota Division of Vocational Rehabilitation, a long and fruitful career devoted to the welfare of deaf persons. It is hard for us now to conceive of the prejudices then held against deaf people; and it is hard for us to estimate the size of our debt to Mrs. Howard, and others like her, for her task in persuading employers and other persons of influence to grant them a place in our society. Her presence before us now is some small recognition of the magnitude and worth of her services.

### Clarence Daniel O'Connor

Clarence Daniel O'Connor has devoted his life to education, thirty years of it to the education of the deaf, in which he has made a great reputation as superintendent of the Lexington School for the Deaf in New York City. An undergraduate student at Columbia College and at the University of North Dakota, he received his bachelor's degree from that university, his master's degree from Columbia Teachers College, and his special training to teach the deaf at the Clarke School for the Deaf in Northhampton, Massachusetts. He has served as principal of public schools in North Dakota and Minnesota and as a member of the faculty of Wesley College of the University of North Dakota. Since 1935, when he became superintendent of the Lexington School for the Deaf, he has been a member of the faculties of Columbia University and of Hunter College. For more than twenty years, in addition to guiding and building his school, he has given his special talents and insights to such organizations as the New York City Board of Education, the New York State Board of Regents, the National Research Council, the New York Medical Society, the New York City Department of Health, the American Public Health Association, and the United Nations Committee on the Deaf and Hard of Hearing.

His contributions to the education of the deaf both in the classroom and on boards charged with policy formation at the highest level have met the highest professional standards.

### Cairine Mackay Wilson

Cairine Mackay Wilson has a record of public service unequalled by many men or women in our times. Elected to the Senate of Canada twenty years ago, she is the first woman to be so honored by her country and is now the second ranking member of her Senate. Early in her career she became known as a supporter of international law and amity: she has served as president of the League of Nations Society of Canada and as delegate to the Fourth General Assembly of the United Nations Organization. But she has been equally concerned with domestic issues and with social welfare. For four generations her family has supported and guided the Mackay School for the Deaf in Montreal, which she now serves as Life Governor. Deaf people in Canada have long looked to her for sympathetic and intelligent support. We join them, and all Canadians, in applauding a world-spirited and a public-spirited citizen.

## CHANGES IN ADMINISTRATION

### CALIFORNIA

Dr. Hugo F. Schunhoff, superintendent of the West Virginia Schools for the Deaf and the Blind in Romney, West Virginia since July, 1953, was appointed superintendent of the California School for the Deaf in Berkeley, California, in August, 1960. Dr. Schunhoff is a graduate of Illinois College in Jacksonville, Illinois, and of the Graduate Department of Education of Gallaudet College. He holds a Master of Education degree from the University of Missouri, Columbia, Missouri, and a doctor's degree in Education from the University of Maryland. The subject of Dr. Schunhoff's dissertation was "The Teaching of Speech and By Speech in Public Residential Schools for the Deaf in the United States, 1815-1955." He taught in the state schools for the deaf in Minnesota and Illinois, and has held the position of principal in the Texas School for the Deaf, the Missouri School for the Deaf, and The Kendall School in Washington, D. C. He was also director of the Graduate Department of Education at Gallaudet College. During World War II Dr. Schunhoff held a commission in the United States Army and was connected with the rehabilitation program for deaf and hard of hearing service men at Deshon General Hospital in Butler, Pennsylvania. At one time Dr. Schunhoff was Director of Curriculum in the Texas School for the Deaf at Austin, Texas, and a member of the university faculty in the training program for teachers of the deaf at the University of Texas in Austin.

At the present time Dr. Schunhoff is vice president of the Conference of Executives of American Schools for the Deaf, having completed a term as secretary of that organization.

Val Becker has been appointed in the joint capacities of Supervisor of the Physically Handicapped in the San Francisco Public Schools and head of the Gough School for the Deaf in San Francisco. Mr. Becker was trained to teach the deaf at Gallaudet College in Washington, D. C. He has taught the deaf in Iowa, Arizona, and the Kendall School for the Deaf. He was formerly Superintendent of the Wisconsin State School in Delavan, and Rehabilitation Counselor for the Deaf in Los Angeles.

### ILLINOIS

Dr. Kenneth R. Mangan was appointed superintendent of the Illinois School for the Deaf, Jacksonville, Illinois in July. Dr. Mangan has been a member of the faculty of the Department of Education at the University of Illinois in Urbana. He has been in educational work for the deaf at the Michigan School for the Deaf in Flint, in the Wisconsin State Department of Education, and for several years served as principal of the Gallaudet Day School for the Deaf in St. Louis, Missouri. Dr. Mangan was trained to teach the deaf at the University of Wisconsin in Milwaukee. He was awarded his doctor's degree in Education at Washington University in St. Louis.

### MINNESOTA

The University of Minnesota is pleased to announce the appointment of Dr. Thomas J. Watson of the University of Manchester, England, to

the staff of the College of Education for the academic year of 1960-61. He will conduct courses and seminars relating to the education of deaf and hard of hearing children.

Dr. Watson is well known for his research and teaching in the Department of Education of the Deaf at the University of Manchester. In 1958 he served as assistant to the Director and Convener of the International Congress on the Modern Educational Treatment of Deafness.

## NEBRASKA

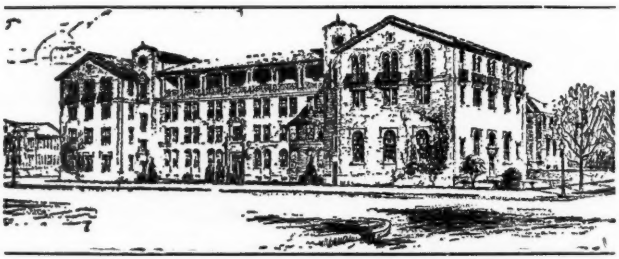
George Henry Thompson has been appointed superintendent of the Nebraska School for the Deaf in Omaha. Previous to his appointment Mr. Thompson served as Activities Director in the Nebraska School. He is a graduate of the Olathe High School, Olathe, Kansas, and has taught in the schools for the deaf in Colorado, Louisiana, and in the Western Pennsylvania School for the Deaf where he took his training for teaching the deaf.

Melvin H. Brasel has been appointed principal of the Nebraska School for the Deaf in Omaha. Mr. Brasel has been principal of the Arkansas School for the Deaf since 1955. He has taught in the Illinois School in Jacksonville. Mr. Brasel was trained to teach the deaf at Gallaudet College.

## WEST VIRGINIA

Jack W. Brady has been appointed superintendent of the West Virginia Schools for the Deaf and the Blind at Romney. Mr. Brady has a B.S. degree in Education from Georgia Teachers College at Statesboro, Georgia, and an M.S. in Education from the University of Pittsburgh. He was trained to teach the deaf at the Western Pennsylvania School for the Deaf, and has taught in the advanced department of the Georgia School for the Deaf and in Western Pennsylvania School for the Deaf. He has also been field representative and counselor at the Georgia School for the Deaf. For the past two years Mr. Brady was assistant superintendent at the American School for the Deaf in West Hartford, Connecticut. Eldon Shipman, principal of the West Virginia Schools for the Deaf and the Blind, served as acting superintendent there for a short time.

THE Language Outline prepared by the members of the faculty at Central Institute for the Deaf, St. Louis, Mo., has been reprinted for the fifth time since it was originally published in the AMERICAN ANNALS OF THE DEAF in September, 1950. Copies may be obtained for fifty cents. Orders may be sent to the AMERICAN ANNALS OF THE DEAF, Gallaudet College, Washington 2, D. C.

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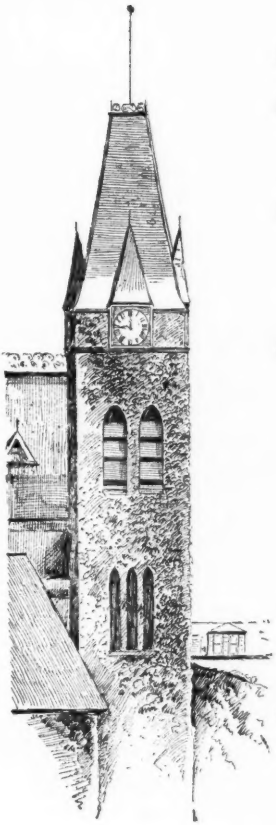

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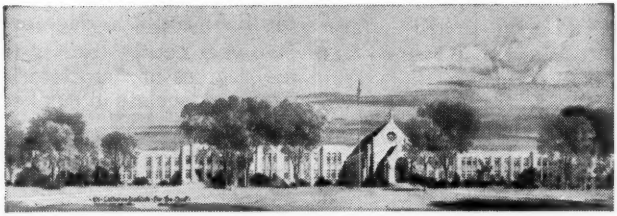

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**AMERICAN ANNALS OF THE DEAF**

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We have orders for back issues of the *American Annals of the Deaf* which we are unable to fill because the supply of some numbers has been exhausted. We need copies of the following back numbers. The *Annals* will pay the express charges to anyone sending in the following back issues, or any back issues.

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April, 1892
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January, 1906
September, 1906
September, 1907
January, 1908
May, 1909
September, 1909
November, 1909
May, 1910
May, 1912
September, 1915
January, 1953
September, 1953
September, 1954
September, 1955
March, 1956
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# EB AUDITORY TRAINER

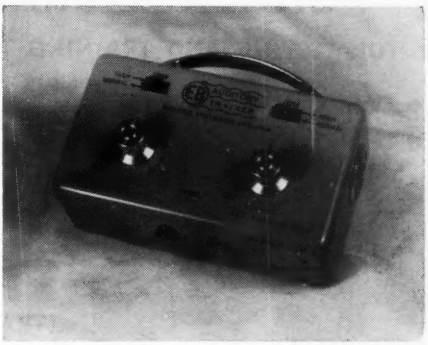
## TWO CHANNEL DESK TYPE HEARING AMPLIFIER WITH DUAL TONE CONTROLS!

***A portable true binaural all transistor amplifier engineered for the hard of hearing***

This compact, low noise, high fidelity unit is composed of two separate amplifiers, each having its own microphone, volume control and two position tone control.

Maximum power output delivered with extremely low distortion.

Internal and external surface noise reduced to a minimum through advanced design and use of high quality components.



### *Especially designed for:*

USE IN SCHOOLS—Auditory training

USE IN THE HOME—TV or radio listening or for normal conversation

USE IN THE OFFICE—Special telephone attachment available at slight extra cost

### *Features . . .*

- Completely transistorized—rugged—stable.
- Battery operated—uses popular type leakproof mercury batteries (approximately one year reliable operation with normal use.)
- Tone Control: 2 position—
  NORMAL: For flat response.
  HIGH: For boost of frequencies above 1000 cps.
  Permits individual compensation for each ear.
- Extremely stable high gain, low noise amplifiers.
- Noiseless volume control.
- Fully guaranteed for period of one year.
- Weight: 1 lb. (without headset)
- Size: 2" x 3" x 5¼".

**Model 31S**

Basic amplifier with lightweight insert type earphones. Easily removable eartips can be replaced with earmolds.

FREQUENCEY RESPONSE:
100-6000 cps

POWER OUTPUT:
135 db above threshold
re .000z dynes/cm²

• • •

Both these models utilize same basic amplifier. Type of headset determines model number.

**PRICES**

| Quantity | MODEL 31S | MODEL 31HF |
|---|---|---|
| | each | each |
| 1 | $195 | $205 |
| 2-4 | 175 | 185 |
| 5-9 | 165 | 175 |
| 10 & Over | 150 | 160 |

• • •

**Model 31HF**

Basic amplifier with high fidelity dynamic earphones.

FREQUENCY RESPONSE:
100-8000 cps

POWER OUTPUT:
120 db above threshold
re .000z dynes/cm²

*A Product of . . .*

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**FOR TESTING AND TRAINING THE AURALLY HANDICAPPED**

- **Fully Transistorized**
- **Lightweight — Compact**

Ambco Binaural and Monaural amplifiers assure "balanced" output, less distortion, greater fidelity, "Lifetime" construction and economical operation.

This compact, Auditory Trainer Model 900 is battery operated and needs no master amplifier unit. Send for free literature.

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**(TRANSISTOR TRUE BINAURAL)**

This binaural transistor trainer is especially suitable for integrated classroom auditory training. Teacher speaks in normal tone. Unit has two amplifiers, two microphones, two volume controls and choice of two earphones on double headband.

▲ Model 951-B Ambco "HAT" with Featherweight Headset.
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This monaural amplifier is a fully transistorized desk type, portable hearing aid. Each unit contains a built-in microphone with individually controlled output to each ear, fed from separate volume controls. The tone control offers a choice of bass or treble operation.

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## THE CONVENTION OF AMERICAN INSTRUCTORS OF THE DEAF



Information concerning membership in the Convention of American Instructors of the Deaf may be obtained from the Treasurer of the Convention, Thomas Dillon, New Mexico School for the Deaf, Santa Fe, New Mexico. Annual membership dues are $2.00. All teachers of the deaf in the United States and Canada are eligible for membership. Members of the Convention receive a copy of the printed *Proceedings* of the Convention of American Instructors of the Deaf. Those desiring subscriptions to the *American Annals of the Deaf* should write to the Editor, Gallaudet College, Washington 2, D. C. The yearly subscription rate is $5.00.

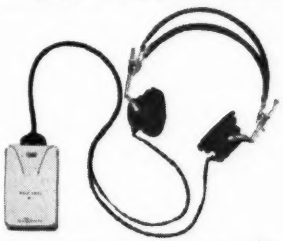
# NEW! WARREN "WALK AWAY" – W-1

## FREE FIELD AUDITORY TRAINING UNIT

The New Warren W-1 is a marvel of engineering, developed and perfected by audio specialists with years of experience in the auditory training field.

The W-1 offers completely new standards of HIGH POWER OUTPUT with EXTREMELY LOW DISTORTION. PENETRATION, DENSITY and CONFIGURATION OF SPEECH is unparalleled in a wearable auditory training unit. The student using a W-1 naturally developes a high degree of RETENTION.

The Warren W-1 actually contains THREE SEPARATE MODES OF OPERATION — Either of which can be selected at the flip of a switch. In one switch position the student is automatically "tuned in" to the FREE FIELD MAGNETIC LOOP CHANNEL of his particular classroom. A second switch position shifts the W-1 over to a second MAGNETIC LOOP CHANNEL such as might be used in an auditorium, assembly hall or other group meeting place. In the third position, the W-1 operates as an independent unit for personal instruction of the student



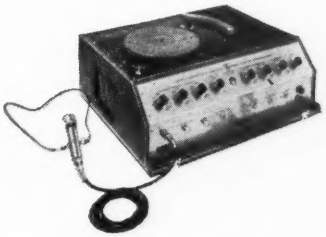
through its regular microphone input channel. Used in this manner, the W-1 provides a natural transition to the student's later use of a regular type hearing aid.

The Warren W-1 uses FIVE TRANSISTORS in a revolutionary new stabilized, low distortion circuit and is easily capable of driving a pair of miniature receivers to their full undistorted output.

A specially designed LINEAR VOLUME CONTROL adjusts the output level smoothly, with NO PEAKS—NO SURGES—and NO INTERNAL NOISE. The W-1 is powered by self-contained, long life MERCURY CELLS of a STANDARD TYPE, easily replaced when exhausted.

Provisions are made for use of either SPECIAL MINIATURE RECEIVERS when the W-1 is used outside the classroom—or WARREN DYNAMIC HEADPHONES when used in the auditory training classroom.

## THE NEW WARREN "FREE FIELD" MAGNETIC AUDITORY TRAINING SYSTEM



The engineers who first made AUDITORY TRAINING OF THE DEAF a perfected reality with the development of GATED COMPRESSION AMPLIFICATION, have now expanded that system for use with the new MODEL W-1 WEARABLE AUDITORY TRAINING UNIT.

Now — The student is completely freed of his desk, of interconnecting cables, control boxes, etc. He can literally "WALK AWAY" to any part of the classroom without missing a single syllable of the training program. THE WARREN MODEL W-1 with either miniature receivers or WARREN DYNAMIC HEADPHONES plugged-in, is the only equipment the student needs.

The rest of the system consists of the well known WARREN MODEL T-2 GATED COMPRESSION AMPLIFIER, to which is added a NEW MODEL CL-1 CHANALATOR. This combination feeds a MAGNETIC LOOP in the classroom thus enabling ANY NUMBER OF STUDENTS to receive the training program. Any number of classrooms can be set up with no interference from adjacent classroom channels.

The MODEL W-1 also has switch positions for a common channel such as an auditorium, gymnasium or other group meeting place.

The new WARREN "FREE FIELD" MAGNETIC AUDITORY TRAINING SYSTEM has revolutionized the field because it's many advantages MAKE THE TEACHING JOB EASIER — THE LEARNING FASTER. We will gladly acquaint you with full details on this "YEARS AHEAD" equipment.

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## ALL TRANSISTOR - PORTABLE

### Model 200

### FOR THRESHOLD & SCREENING TESTS

**An instrument engineered for those who have need for a compact and lightweight audiometer designed according to ASA specifications.**

A highly compact all transistor basic audiometer designed for use in the field or office, combining ease of portability with all of the features and reliable performance expected in a full size audiometer.

Incorporated within this audiometer are many advanced features including an all transistor circuit. The audiometer itself is housed within a professional and attractive carrying case of which it is an integral part.

**TROUBLE FREE AND STABLE OPERATION IS ASSURED BY SUCH DESIGN FACTORS AS THE FOLLOWING:**

Virtually shockproof and rugged circuitry achievable only with transistors permitting constant output levels and accuracy of attenuator settings at all times.

Inherently stable oscillator circuit producing unusually pure tones with low harmonic content.

An efficient rapid acting tone interrupter which provides for tones which are free of clicks.

Unique storage compartment which allows easy removal and replacement of double headset.

An automatic battery replacement indicator light which gives advance warning at least two weeks before batteries need to be replaced.

**OVERALL FEATURES:**

Full range attenuator: accurate at all levels and quiet in operation.

Full range frequency switch has 360° dial rotation.

Tone interrupter reversal switch.

No A.C. electrical connections needed; powered with low cost standard leak proof mercury batteries assuring over one year of heavy duty operation before battery replacement is required.

Batteries may be easily replaced (no need for even a screwdriver!)

Output to 2 phones and group.

Group position permits multiple testing up to a maximum of 40 phones.

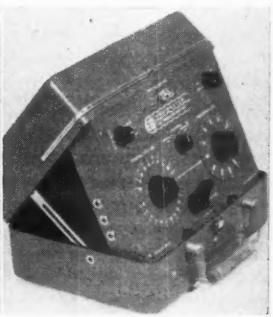
Extremely low maintenance cost (Rugged and shockproof transistor circuit eliminates need for costly repairs).

All aluminum case attractively finished.

Complete with two approved type dynamic phones, headband, cords and batteries.

**SPECIFICATIONS:**

Attenuator Range:—10 to 100 db in 5 db steps.
Frequency Range: Eleven frequencies; 125-8000 CPS. including mid-frequencies.
Power Source: Popular type mercury batteries.
Frequency Accuracy: Within 3% of specified frequency.
Calibration Accuracy: Within 2 db of indicated levels.
Tone Interrupter: Total rise and decay time; approx. 0.1 sec.
Dimensions: 7 x 9¼" x 4¼" (when closed).
Weight: 5 lbs. complete.
Designed according to ASA specifications.
Price: $285.00 complete with double headset.



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# THE CENTRAL NEW YORK SCHOOL FOR THE DEAF

## ROME 1, NEW YORK

Oral education for the deaf: Residential and Day School—co-ed, ages 3–20, Nursery, Kindergarten, Grades I–VIII, High School 1–4, Academic-Vocational. 70 Boys, 60 Girls. This Public-Private School provides speech and speech reading and auricular program, combining residential-day school and home environment plus religious emphasis program, to develop deaf pupils to become "all He or She is Capable of Being."

Free State Appointment Scholarships to Residents

Out of State Room, Board and Tuition $3,000 per Year

The Central New York School for the Deaf, as its name implies, is located in the very heart of New York State. It is situated in the City of Rome—"The Christmas City," "The Copper City," "Winter Wonderland," and a place where "there is time for living."

The program for the School is oral. The children are well behaved, normal, intelligent and the atmosphere of the school is friendly and home-like.

We also take this means of acquainting teachers of the deaf with our salary schedule, of which we are proud and, candidly, we hope that some more good teachers in the profession may decide they would like to come to Rome and teach at THE CENTRAL NEW YORK SCHOOL FOR THE DEAF, as vacancies occur and teachers retire.

### SALARY SCHEDULE

| | B Schedule | A Schedule |
|---|---|---|
| 1. | $4700 | $5000 |
| 2. | 4800 | 5100 |
| 3. | 4900 | 5200 |
| 4. | 5100 | 5400 |
| 5. | 5300 | 5600 |
| 6. | 5500 | 5800 |
| 7. | 5700 | 6000 |
| 8. | 5900 | 6200 |

**All increments beyond step 8 are on merit basis. Promotional. maximum 6800 maximum 7200**

**In addition noon luncheon is furnished.**

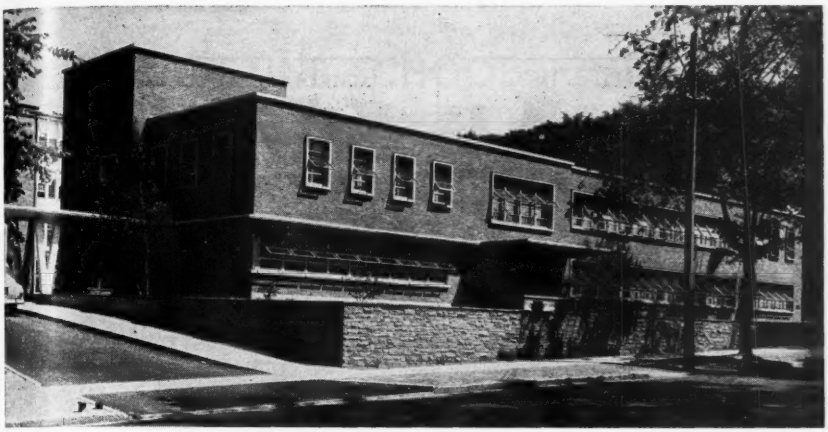
**School Session 180 days inclusive of days spent at meeting of the State Teachers Association.**

**PRIOR TEACHING EXPERIENCE MAY BE FULLY RECOGNIZED**

The American Flag was first flown in the face of an enemy on August 3, 1777, at the siege of Fort Stanwix, Rome, New York. (Information service of the Rome, N. Y., Chamber of Commerce.)

For further information, please write:

**Fred L. Sparks, Jr., Superintendent**
**THE CENTRAL NEW YORK SCHOOL FOR THE DEAF**
**Rome 1, New York**



# SYRACUSE UNIVERSITY

announces the opening of its Summer Residence School for 1961.

## THE SCHOOL IS FOR

hard of hearing and deaf children. They are provided with a rehabilitation program including auditory training, lipreading, speech and language activities, and, where desirable, the selection and evaluation of hearing aids.

children with articulatory difficulties. These children are given training to correct distorted, substituted and omitted sounds.

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children with cleft-palate speech. Instruction is given to improve their voice quality, and to make their pronunciation more distinct and intelligible.

## COST OF THE SCHOOL

for the full term is $375.00 per child. This amount includes instruction, testing and continuous diagnosis, health services, recreation, supervision, and board and room. Bed linen and blankets are furnished by the School. Towels, clothing and personal laundry are provided by the child. Spending money should be limited to $10.00 for the entire period. It should cover all incidental expenses and is supervised by the Staff in the interest of health and general morale.

## FOR INFORMATION, WRITE TO

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Teacher of Math, Junior High School and High School, Central N. Y. School for the Deaf, Rome 1, N. Y. Open September 1960.

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Also in use, the latest development by MELODY MASTER*—the PERMADYNE Extended Range Dynamic Headphones with a wider, flatter frequency response and much greater power handling ability. (Write for catalog page.)

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**BROAD RESPONSE RANGE—(What it means to you)**—Almost twice the range of sounds reproduced and amplified than former Zenith model. Brings in sounds never before experienced through this successful model.

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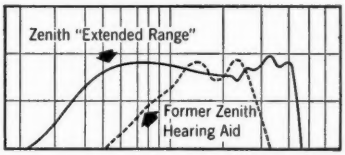
| **New Zenith "Extended Range"** | 4370 cps |

**Hear More Sounds—Distinguish Sound Better**—You hear more sounds—and you hear them more accurately. Zenith's new "Extended Range" faithfully amplifies "unvoiced consonants" such as th, f, sh, h, most important for understanding speech. These are the whispered sounds you miss with many hearing aids. It also reproduces the "overtones or harmonics" which enable you to better distinguish between different voices and sounds.

**FLAT RESPONSE—(What it means to you)**—Sounds reproduced in extreme "peaks" are amplified more than other sounds coming to you, causing distortion in what you hear. Annoying clothing noise and restaurant clatter within these "peaks" are then over-amplified causing hearing discomfort and lack of clarity.




**Far Less Distortion and Background Noise.** The Zenith "Extended Range" virtually eliminates these noisy sound "peaks." Puts background sounds in proper balance with the sounds you want to hear.

**Answers "Recruitment Problem."** If "recruitment" (the inability to stand loud noises) bothers you, then the "Extended Range" can be your answer. All sounds are far more normal, more perfectly balanced.

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"LIVING SOUND"
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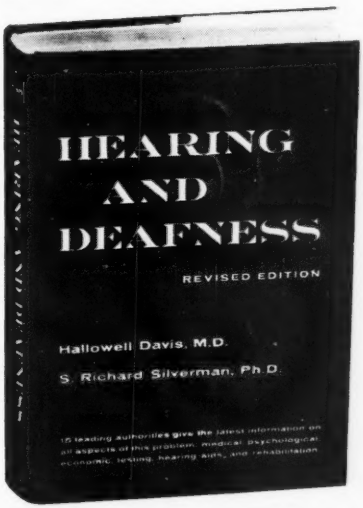


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No work in this field has till now been available comparable in scope to this new volume. In four parts, it first takes up the problem, measurement, types, causes and significance of sensory deprivation. Part II discusses the effect of deafness on mental development and functioning, personality adjustment, social maturity and motor behavior. Part III presents a variety of educational implications, while the final section deals with relationships between hearing and vision and includes material on vocational guidance and rehabilitation.

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